

# Participant Handbook



UTAH STATE  
OFFICE OF



EDUCATION

ELEMENTARY CORE ACADEMY

6517 Old Main Hill  
Logan, UT 84322-6517

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<http://coreacademy.usu.edu>

**UtahState**  
UNIVERSITY

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# Acknowledgements

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## **Organizations:**

Utah State Office of Education (USOE)  
Utah State University (USU)  
State Science Education Coordination Committee (SSECC)  
State Mathematics Education Coordination Committee (SMECC)  
Special Education Services Unit (USOE)

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# UTAH STATE OFFICE OF EDUCATION

Leadership...Service...Accountability

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Dear CORE Academy Teachers:

Thank you for your investment in children and in building your own expertise as you participate in the Elementary CORE Academy. I hope your involvement helps you to sustain a laser-like focus on student achievement.

Teachers in Utah are superb. By participating in the Academy, you join a host of teachers throughout the state who understand that teaching targeted on the core curricula, across a spectrum of subjects, will produce results of excellence. The research is quite clear—the closer the match of explicit instruction to core standards, the better the outcome on core assessments.

I personally appreciate your excellence and your desire to create wonderful classrooms of learning for students. Thank you for your dedication. I feel honored to associate with you and pledge my support to lead education in ways that benefit all of our children.

Sincerely,



Patti Harrington, Ed.D.  
State Superintendent of Public Instruction

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# Funding Sources

Appreciation is expressed for the tremendous educational input and monetary commitment of several organizations for the successful delivery of the Elementary CORE Academy. This year's Elementary CORE Academy was developed and funded through a variety of sources. The Utah State Office of Education (USOE), in collaboration with Utah State University (USU) and local school districts of Utah, have supported kindergarten through sixth grade teachers with professional development experiences that will enhance the educational experience for Utah children.

Major funding for the Academy comes from the following sources:

## Federal/State Funds:

- Utah State Office of Education
  - Staff Development Funds
  - Special Education Services Unit
- ESEA Title II
- Utah Math Science Partnership
- WestED Eisenhower Regional Consortium

## District Funds:

Various sources including Quality Teacher Block, Federal ESEA Title II, and District Professional Development Funds

## School Funds:

- Trust land, ESEA Title II, and other school funds
- Utah State Office of Education Special Education Services

The state and district funds are allocations from the state legislature. ESEA is part of the “No Child Left Behind” funding that comes to Utah.

Additionally, numerous school districts, individual schools, and principals in Utah have sponsored teachers to attend the Academy. Other educational groups have assisted in the development and delivery of resources in the Academy.

Most important is the thousands of teachers who take time from their summer to attend these professional development workshops. It is these teachers who make this program possible.

# Goals of the Elementary CORE Academy

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## Overall

The purpose of the Elementary CORE Academy is to create high quality teacher instruction and improve student achievement through the delivery of professional development opportunities and experiences for teachers across Utah.

## The Academy will provide elementary teachers in Utah with:

1. Models of exemplary and innovative instructional strategies, tools, and resources to meet the Core Curriculum standards, objectives, and indicators.
2. Practical models and diverse methods of meeting the learning needs of all children, with instruction implementation aligned to the Core Curriculum.
3. Meaningful opportunities for collaboration, self-reflection, and peer discussion specific to innovative and effective instructional techniques, materials, teaching strategies, and professional practices in order to improve classroom instruction.

Learning a limited set of facts will no longer prepare a student for real experiences encountered in today's world. It is imperative that educators have continued opportunities to obtain instructional skills and strategies that provide methods of meeting the needs of all students. Participants of the Academy experience will be better equipped to meet the challenges faced in today's classrooms.

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# **First Grade**

## **Core Curriculum**



# K-2 Core Curriculum

## Introduction

Most students enter school confident in their own abilities; they are curious and eager to learn more. They make sense of the world by reasoning and problem solving. Young students are active, resourceful individuals who construct, modify, and integrate ideas by interacting with the physical world as well as with peers and adults. They learn by doing, collaborating, and sharing their ideas. Students' abilities to communicate through language, pictures, sound, movement, and other symbolic means develop rapidly during these years.

Literacy requires an understanding of listening, speaking, reading, writing, and viewing in many forms including print and electronic images. Today, more than ever, students must have the ability to think critically while applying new information to existing knowledge. Therefore, school literacy programs need to involve students in learning to read and write in situations that foster critical thinking and the use of literacy for independent learning in all content areas.

Young students are building beliefs about what mathematics is, about what it means to know and do mathematics, and about themselves as mathematical learners. Mathematics instruction needs to include more than short-term learning of rote procedures. Students must use technology and other mathematical tools, such as manipulative materials, to develop conceptual understanding and solve problems as they do mathematics. Students, as mathematicians, learn best with hands-on, active experiences throughout the instruction of the mathematics curriculum.

Language Arts and Mathematics are the tools for doing work in other areas. These content areas need to be integrated into other curriculum areas to provide students with optimal learning. The curriculum becomes more relevant when content areas are connected rather than taught in strict isolation. For this reason, the content areas of the Fine Arts, Health Education, Physical Education, Science, and Social Studies have been combined to enable teachers to teach more efficiently and students to learn in a real-life context that enhances lifelong learning.

The Kindergarten through Second Grade Core describes what students should know and be able to do at the end of each of the kindergarten, first, and second grade levels. It has been developed, critiqued, and revised by a community of Utah teachers, university

- Young children learn by doing, collaborating, and sharing their ideas.



Organization of the  
K-2 Core:

- Intended Learning Outcomes
- Standard
- Objective
- Indicator

educators, State Office of Education specialist, and an advisory committee representing a wide variety of people from the community. The Core reflects the current philosophy of education that is expressed in national documents developed by the International Reading Association, National Council of the Teachers of Mathematics, National Standards for Arts Education, Information Power, National Association for Sport and Physical Education, American Association for the Advancement of Science, National Council for the Social Studies, International Society for Technology and Education, and Early Childhood Standards.

## Organization of the K-2 Core

The Core is designed to help teachers organize and deliver instruction.

- Each grade level begins with a brief course description.
- The Kindergarten, First, and Second Grade INTENDED LEARNING OUTCOMES describe the goals for students to gain knowledge and understand their world. They are found at the beginning of each grade level, are an integral part of the Core, and should be included as part of instruction.
- The first Core area consists of the Language Arts curriculum.
- The second Core area consists of the Mathematics curriculum.
- The third Core area consists of the subject areas of the Fine Arts, Health Education, Physical Education, Science, and Social Studies.
- A STANDARD is a broad statement of what students are expected to understand. Several Objectives are listed under each Standard.
- An OBJECTIVE is a more focused description of what students need to know and be able to do at the completion of instruction. If students have mastered the Objectives associated with a given Standard, they have mastered that Standard at that grade level. Several Indicators are described for each Objective.
- An INDICATOR is a measurable or observable student action that enables one to assess whether a student has mastered a particular Objective. Indicators are not meant to be classroom activities, but they can help guide classroom instruction.

# Guidelines Used in Developing the K-2 Core

## The Core is:

### Consistent With the Nature of Learning

The main intent in the early grades is for students to value learning and develop the skills to gain knowledge and understand their world. The Core is designed to produce an integrated set of Kindergarten, First, and Second Grade Intended Learning Outcomes for students, with specific goals in all content areas.

- By emphasizing depth rather than breadth, the Core seeks to empower students.

### Coherent

The Core has been designed so that, wherever possible, the ideas taught within a particular grade level have a logical and natural connection with each other and with those of earlier grades. Efforts have also been made to select topics and skills that integrate well with one another appropriate to grade level. In addition, there is an upward articulation of concepts, skills, and content. This spiraling is intended to prepare students to understand and use more complex concepts and skills as they advance through the learning process.

### Developmentally Appropriate

The Core takes into account the psychological and social readiness of students. It builds from concrete experiences to more abstract understandings. The Core focuses on providing experiences with concepts that students can explore and understand in depth to build the foundation for future learning experiences.

### Reflective of Successful Teaching Practices

Learning through play, movement, and adventure is critical to the early development of the mind and body. The Core emphasizes student exploration. The Kindergarten, First, and Second Grade Intended Learning Outcomes are central in each standard. The Core is designed to encourage instruction with students working in cooperative groups. Instruction should recognize the importance of each Core area in the classroom, school, and community.

### Comprehensive

The Kindergarten, First, and Second Grade Core does not cover all topics that have traditionally been in the Kindergarten, First, and Second Grade curriculum; however, it provides a basic foundation of knowledge and skills in all content areas. By emphasizing depth

- Student achievement of the standards and objectives in this Core is best assessed using a variety of assessment instruments.

rather than breadth, the Core seeks to empower students rather than intimidate them with a collection of isolated and eminently forgettable facts. Teachers are free to add related concepts and skills, but they are expected to teach all the standards and objectives specified in the Core for their grade level.

### **Feasible**

Teachers and others who are familiar with Utah students, classrooms, teachers, and schools have designed the Core. It can be taught with easily obtained resources and materials. A Teacher Handbook is also available for teachers and has sample lessons on each topic for each grade level. The Teacher Handbook is a document that will grow as teachers add exemplary lessons aligned with the new Core.

### **Useful and Relevant**

This curriculum relates directly to student needs and interests. Relevance of content areas to other endeavors enables students to transfer skills gained from one area of instruction into their other school subjects and into their lives outside the classroom.

### **Reliant Upon Effective Assessment Practices**

Student achievement of the standards and objectives in this Core is best assessed using a variety of assessment instruments. Performance tests are particularly appropriate to evaluate student mastery of thinking processes and problem-solving skills. A variety of classroom assessment approaches should be used by teachers in conjunction with the Criterion Referenced Tests (CRT) that are administered to first and second grade students in Language Arts and Mathematics, and with the pre- and post-tests administered in kindergarten. Observation of students engaged in instructional activities is highly recommended as a way to assess students' skills as well as attitudes toward learning. The nature of the questions posed by students provides important evidence of their understanding.

### **Engaging**

In the early grades, children are forming attitudes and habits for learning. It is important that instruction maximizes students' potential and gives them understanding of the intertwined nature of learning. Effective elementary instruction engages students actively in enjoyable learning experiences. Instruction should be as thrilling an experience for a child as seeing a rainbow, growing a flower, or describing a toad. In a world of rapidly expanding knowledge and technology, all students must gain the skills they will need to understand and function responsibly and successfully in the world. The Core provides skills in a context that enables students to experience the joy of learning.

# The First Grade Core Curriculum

First grade core concepts should be integrated across all curriculum areas. Reading, writing, and mathematical skills should be emphasized as integral to the instruction in all other areas. Personal relevance of content is always an important part of helping students to value learning and should be emphasized.

In first grade, students are immersed in a literature-rich environment to develop an awareness of phonemes and print materials as sources of information and enjoyment. They listen and speak to participate in classroom discussions and use a variety of strategies to read new words and familiar selections aloud with fluency and expression. Understanding the main idea and sequence of events in a story are important comprehension skills that are applied in all other content areas.

First graders continue their development of number sense. Students understand and use the concept of ones and tens in the base-ten number system. Students understand the meaning of addition and subtraction and add and subtract small numbers with ease. They measure with simple units and extend their understanding of geometric figures in their environment. They represent, describe, and interpret data and analyze and solve simple problems.

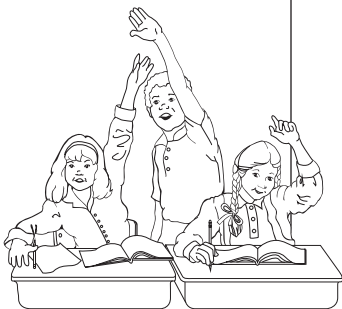
In first grade, students learn about themselves and their relationship to the classroom, school, family, and community. Students develop the skills of questioning, gathering information, making measurements using nonstandard units, constructing explanations, and drawing conclusions. Students learn about their bodies and the behaviors necessary to protect them and keep them healthy. They learn basic body control while beginning to develop motor skills and moving in a variety of settings. Students become aware of strength, endurance, and flexibility in different parts of their bodies. They express their thoughts and ideas creatively, while challenging their imagination, fostering reflective thinking, and developing disciplined effort and problem-solving skills.

- Reading, writing, and mathematical skills should be emphasized as integral to the instruction in all other areas.



## K-2 Intended Learning Outcomes

- Intended learning outcomes provide a direction for general classroom instruction, management, culture, environment, and inclusion.



The main intent at the early grades is for students to value learning and develop the skills to gain knowledge and understand their world.

The Intended Learning Outcomes described below reflect the belief that kindergarten, first, and second grade education should address the intellectual, social, emotional, physical, and ethical development of children. While the Kindergarten, First, and Second Grade Core Curriculum focuses primarily on content and the intellectual development of children, it is important to create a classroom culture that fosters development of many aspects of a person. By nurturing development in these interrelated human domains, young people will be healthy and discover varied and exciting talents and dreams. They will be socially and civically competent and able to express themselves effectively.

The outcomes identified below are to provide a direction for general classroom instruction, management, culture, environment, and inclusion. These outcomes should be interwoven throughout the Kindergarten, First, and Second Grade Core Curriculum, which offers more specific and measurable standards for instruction.

Beginning in kindergarten and by the end of second grade students will be able to:

- 1. Demonstrate a positive learning attitude.**
  - a. Display a sense of curiosity.
  - b. Practice personal responsibility for learning.
  - c. Demonstrate persistence in completing tasks.
  - d. Apply prior knowledge and processes to construct new knowledge.
  - e. Voluntarily use a variety of resources to investigate topics of interest.
- 2. Develop social skills and ethical responsibility.**
  - a. Respect similarities and differences in others.
  - b. Treat others with kindness and fairness.
  - c. Follow classroom and school rules.
  - d. Include others in learning and play activities.
  - e. Participate with others when making decisions and solving problems.
  - f. Function positively as a member of a family, class, school, and community.

- 3. Demonstrate responsible emotional and cognitive behaviors.**
  - a. Recognize own values, talents, and skills.
  - b. Express self in positive ways.
  - c. Demonstrate aesthetic awareness.
  - d. Demonstrate appropriate behavior.
  - e. Express feelings appropriately.
  - f. Meet and respect needs of self and others.
- 4. Develop physical skills and personal hygiene.**
  - a. Respect physical similarities and differences in self and others.
  - b. Learn proper care of the body for health and fitness.
  - c. Develop knowledge that enhances participation in physical activities.
  - d. Display persistence in learning motor skills and developing fitness.
  - e. Use physical activity for self-expression.
- 5. Understand and use basic concepts and skills.**
  - a. Develop phonological and phonemic awareness.
  - b. Decode, read, and comprehend written text and symbols.
  - c. Develop vocabulary.
  - d. Develop reasoning and sequencing skills.
  - e. Demonstrate problem-solving skills.
  - f. Observe, sort, and classify objects.
  - g. Make and interpret representations, graphs, and models.
  - h. Recognize how content ideas interconnect.
  - i. Make connections from content areas to application in real life.
- 6. Communicate clearly in oral, artistic, written, and nonverbal form.**
  - a. Share ideas using communication skills.
  - b. Predict an event or outcome based on evidence.
  - c. Use appropriate language to describe events, objects, people, ideas, and emotions.
  - d. Listen attentively and respond to communication.
  - e. Use mathematical concepts to communicate ideas.
  - f. Use visual art, dance, drama, and music to communicate.

# First Grade Language Arts Core Curriculum

Standard I:

**Oral Language—**  
Students develop  
language for  
the purpose  
of effectively  
communicating  
through listening,  
speaking, viewing,  
and presenting.

**Standard I:**     **Oral Language—Students develop language for the purpose of effectively communicating through listening, speaking, viewing, and presenting.**

**Objective 1:**    Develop language through listening and speaking.

- a. Identify specific purpose(s) for listening (e.g., to gain information, to be entertained).
- b. Listen and demonstrate understanding by responding appropriately (e.g., follow multiple-step directions, restate, clarify, question).
- c. Speak clearly and audibly with expression in communicating ideas.
- d. Speak in complete sentences.

**Objective 2:**    Develop language through viewing media and presenting.

- a. Identify specific purpose(s) for viewing media (i.e., to identify main idea and details, to gain information, distinguish between fiction/nonfiction).
- b. Use a variety of formats (e.g., show and tell, drama, sharing of books and personal writings, choral readings, informational reports, retelling experiences and stories in sequence) in presenting with various forms of media.

**Standard II: Concepts of Print—Students develop an understanding of how printed language works.**

*Objective 1:* Demonstrate an understanding that print carries “the” message.

- a. Recognize that print carries different messages.
- b. Identify messages in common environmental print (e.g., signs, boxes, wrappers).

*Objective 2:* Demonstrate knowledge of elements of print within a text.

- a. Discriminate between letters, words, and sentences in text.
- b. Match oral words to printed words while reading.
- c. Identify punctuation in text (i.e., periods, question marks, and exclamation points).

Standard II:

*Concepts of Print—*  
Students develop  
an understanding  
of how printed  
language works.



Standard III:  
Phonological and  
Phonemic  
Awareness—  
Students develop  
phonological  
and phonemic  
awareness.

**Standard III: Phonological and Phonemic Awareness—Students develop phonological and phonemic awareness.**

*Objective 1:* Demonstrate phonological awareness.

- a. Count the number of syllables in words.
- b. Count the number of syllables in a first name.

*Objective 2:* Recognize like and unlike word parts (oddity tasks).

- a. Identify words with same beginning consonant sounds (e.g., man, sat, sick) and ending consonant sounds (e.g., man, sat, ten) in a series of words.
- b. Identify words with same medial sounds in a series of words (e.g., long vowel sound: take, late, feet; short vowel sound: top, cat, pan; middle consonant sound: kitten, missing, lesson).

*Objective 3:* Orally blend word parts (blending).

- a. Blend syllables to make words (e.g., /ta.../ble/, table).
- b. Blend onset and rime to make words (e.g., /p.../an/, pan).
- c. Blend individual phonemes to make words (e.g., /s/ /a/ /t/, sat).

*Objective 4:* Orally segment words into word parts (segmenting).

- a. Segment words into syllables (e.g., table, /ta.../ble/).
- b. Segment words into onset and rime (e.g., pan, /p.../an/).
- c. Segment words into individual phonemes (e.g., sat, /s.../a.../t/).

*Objective 5:* Orally manipulate phonemes in words and syllables (manipulation).

- a. Substitute initial and final sound (e.g., replace first sound in mat to /s/, say sat; replace last sound in mat with /p/, say map).
- b. Substitute vowel in words (e.g., replace middle sound in map to /o/, say mop).
- c. Delete syllable in words (e.g., say baker without the /ba/, say ker).
- d. Deletes initial and final sounds in words (e.g., say sun without the /s/, say un; say hit without the /t/, say hi).
- e. Delete initial phoneme and final phoneme in blends (e.g., say step without the /s/, say tep; say best without the /t/, say bes).

**Standard IV: *Phonics and Spelling*—Students use phonics and other strategies to decode and spell unfamiliar words while reading and writing.**

*Objective 1:* Demonstrate an understanding of the relationship between letters and sounds.

- a. Write letters to represent spoken sounds of all letters of the alphabet in random order.
- b. Identify and pronounce sounds for consonants, consonant blends (e.g., br, st, fl) and consonant digraphs (e.g., ch, sh, wh, th) accurately in words.
- c. Identify and pronounce sounds for short and long vowels, using patterns (e.g., vc, vcv, cvc, cvvc, cvcv, cvc-silent e), and vowel digraphs (e.g., ea, ee, ie, oa, ai, ay, oo, ow) accurately in words.
- d. Identify and pronounce sounds for r-controlled vowels accurately in one-syllable words (e.g., ar, or, er).
- e. Identify and blend initial letter sounds with common vowel patterns to pronounce one-syllable words (e.g., /g/.../oa/.../t/, goat).

*Objective 2:* Use knowledge of structural analysis to decode words.

- a. Identify and read grade level contractions and compound words.
- b. Identify sound patterns and apply knowledge to decode one-syllable words (e.g., blends, digraphs, vowel patterns, r-controlled vowels).
- c. Demonstrate an understanding of representing same sound with different patterns by decoding these patterns accurately in one-syllable words (e.g., ee, ie, ea, e).
- d. Use knowledge of root words and suffixes to decode words (i.e., -ful, -ly, -er).
- e. Use letter patterns to decode words (e.g., phonograms/word families/onset and rime: -ack, -ail, -ake).

*Objective 3:* Spell words correctly.

- a. Write sounds heard in words in the correct order.
- b. Hear and write beginning, middle, and ending consonant sounds to spell one-syllable words.

Standard IV:

*Phonics and*

*Spelling*—Students use phonics and other strategies to decode and spell unfamiliar words while reading and writing.

- c. Spell short vowel words with consonant blends and digraphs (e.g., bl, st, nt, sh, wh, th).
- d. Spell an increasing number of grade level high-frequency and irregular words correctly (e.g., bear, gone, could).
- e. Learn the spellings of irregular and difficult words (e.g., river, house, animal).

*Objective 4:* Use spelling strategies to achieve accuracy (e.g., prediction, visualization, association).

- a. Use knowledge about spelling to predict the spelling of new words.
- b. Associate the spelling of new words with that of known words and word patterns.
- c. Use spelling generalities to assist spelling of new words (e.g., one vowel between two consonants, silent “e” on the end of a word, two vowels together).

**Standard V:**     *Fluency*—Students develop reading fluency to read aloud grade level text effortlessly without hesitation.

*Objective 1:*   Read aloud grade level text with appropriate speed and accuracy.

- a. Read grade level text at a rate of approximately 60 wpm.
- b. Read grade level text with an accuracy rate of 95-100%.

*Objective 2:*   Read aloud grade level text effortlessly with clarity.

- a. Read grade level text in three- to four-word phrases using intonation, expression, and punctuation cues.
- b. Read with automaticity 100 first grade high-frequency/sight words.

Standard V:

***Fluency***—Students develop reading fluency to read aloud grade level text effortlessly without hesitation.

Standard VI:  
**Vocabulary**—  
 Students learn  
 and use grade  
 level vocabulary  
 to increase  
 understanding and  
 read fluently.

**Standard VI: Vocabulary—Students learn and use grade level vocabulary to increase understanding and read fluently.**

*Objective 1:* Learn new words through listening and reading widely.

- a. Use new vocabulary learned by listening, reading, and discussing a variety of genres.
- b. Learn the meanings of a variety of grade level words (e.g., words from literature, social studies, science, math).
- c. Use resources to learn new words by relating them to known words (e.g., books, charts, word walls, simple dictionaries).

*Objective 2:* Use multiple resources to learn new words by relating them to known words and/or concepts. See second, third, fourth, fifth, and sixth grades.

*Objective 3:* Use structural analysis and context clues to determine meanings of words.

- a. Identify meanings of words using the root word and known endings (e.g., car, cars; jump, jumped, jumping).
- b. Use context to determine meanings of unknown key words (e.g., The gigantic dog couldn't fit in his new doghouse.).

**Standard VII: Comprehension—Students understand, interpret, and analyze narrative and informational grade level text.**

*Objective 1:* Identify purposes of text.

- a. Discuss purpose for reading.
- b. Discuss author's purpose.

*Objective 2:* Apply strategies to comprehend text.

- a. Relate prior knowledge to make connections to text (e.g., text to text, text to self, text to world).
- b. Ask questions about text read aloud and independently.
- c. Make predictions using picture clues, title, text, and/or prior knowledge.
- d. Make inferences and draw conclusions from text.
- e. Identify topic/main idea from text noting details.
- f. Retell using important ideas/events and supporting details in sequence.
- g. Compile information from text.

*Objective 3:* Recognize and use features of narrative and informational text.

- a. Identify beginning, middle, and end; characters; setting; problem/resolution.
- b. Identify different genres: nursery rhymes, fairy tales, poems, realistic fiction, fantasy, fables.
- c. Identify information from pictures, captions, and diagrams.
- d. Identify multiple facts in grade level informational text.
- e. Locate facts from informational texts (e.g., picture books, grade level informational books).

Standard VII:

**Comprehension—**  
Students understand, interpret, and analyze narrative and informational grade level text.

Standard VIII:  
**Writing**—Students write daily to communicate effectively for a variety of purposes and audiences.

**Standard VIII: Writing—Students write daily to communicate effectively for a variety of purposes and audiences.**

*Objective 1:* Prepare to write by gathering and organizing information and ideas (pre-writing).

- a. Generate ideas for writing by reading, discussing literature and informational text, drawing, looking at books, being read to, and reflecting on personal experiences.
- b. Select topics from generated ideas.
- c. Identify audience for writing.

*Objective 2:* Compose a written draft.

- a. Draft ideas on paper in an organized manner (e.g., beginning, middle, end) utilizing words and sentences.
- b. Select appropriate words to convey meaning.

*Objective 3:* Revise by elaborating and clarifying a written draft.

- a. Revise draft to add details.
- b. Revise draft using descriptive words.
- c. Write in complete sentences.

*Objective 4:* Edit written draft for conventions.

- a. Edit writing for capitals in names, first word of a sentence, and the pronoun “I” and correct ending punctuation (i.e., periods, question marks).
- b. Edit for spelling of grade level-appropriate words (e.g., would, down, made, write).
- c. Edit for standard grammar (i.e., complete sentences).
- d. Edit for appropriate formatting features (i.e., spacing, margins, titles).

*Objective 5:* Use fluent and legible handwriting to communicate.

- a. Print all upper- and lower-case letters of the alphabet and numerals 0-9 using proper form, proportions, and spacing.
- b. Write with increasing fluency in forming manuscript letters and numerals.
- c. Produce legible documents with manuscript handwriting.

*Objective 6:* Write in different forms and genres.

- a. Produce personal writing (e.g., journals, lists, friendly notes and letters, personal experiences, family stories, literature responses).
- b. Produce traditional and imaginative stories, narrative and formula poetry as a shared writing activity.
- c. Produce functional text (e.g., ABC books, lists, labels, signs, how-to books, observations).
- d. Share writing with others using illustrations to add meaning to published works.
- e. Publish group and individual products.

# First Grade Mathematics Core Curriculum

## Standard I:

Students will acquire number sense and perform simple operations with whole numbers.

By the end of grade one, students understand and use the concept of ones and tens in the base-ten number system. Students understand the meaning of addition and subtraction and add and subtract small numbers with ease. They measure with simple units and extend their understanding of geometric figures in their environment. They represent, describe, and interpret data and analyze and solve simple problems.

### **Standard I: Students will acquire number sense and perform simple operations with whole numbers.**

*Objective 1:* Represent and use whole numbers up to 100.

- a. Count, read, and write whole numbers.
- b. Represent whole numbers using the number line, models, and number sentences.
- c. Represent whole numbers greater than 10 in groups of tens and ones using objects, pictures, and expanded notation.

*Objective 2:* Identify simple relationships among whole numbers up to 100.

- a. Compare and order sets of objects and numbers using the terms greater than, less than, and equal to when describing the comparisons.
- b. Make reasonable estimates of the quantitative difference between two sets of objects.
- c. Identify one more, one less, 10 more, and 10 less than a given number.
- d. Identify numbers missing from a counting sequence.
- e. Represent part-whole relationships using the number line.

*Objective 3:* Model, describe, and illustrate the meanings of addition and subtraction and use these operations to solve problems.

- a. Use a variety of models, including objects, length-based models, the number line and the ten frame to describe problem types (i.e., part-whole, combine, separate, compare).



- b. Use the properties of addition (i.e., commutativity, associativity, identity element) and the mathematical relationship between addition and subtraction to solve problems.
- c. Compute basic addition facts (up to  $10 + 10$ ) and the related subtraction facts using strategies (e.g.,  $6 + 7 = (6 + 4) + 3 = 10 + 3 = 13$ ).
- d. Find the sum of three one-digit numbers.

**Mathematical language and symbols students should use:**

add, sum, subtract, difference, greater than, less than, equal to

**Exploratory Concepts and Skills**

- Use concrete materials to investigate situations that lead to multiplication and division.
- Develop and use strategies for addition and subtraction of multi-digit whole numbers.
- Investigate the meaning of fraction concepts.
- Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally.

Standard II:

Students will identify and use number patterns and properties to describe and represent mathematical relationships.

**Standard II: Students will identify and use number patterns and properties to describe and represent mathematical relationships.**

*Objective 1:* Recognize, describe, and represent patterns with more than one attribute.

- a. Sort and classify objects using more than one attribute.
- b. Identify, create, and label repeating patterns using objects, pictures, and symbolic notation.
- c. Identify, create, and label growing patterns using objects, pictures, and symbolic notation.
- d. Use patterns to establish skip counting by twos, fives, and tens.

*Objective 2:* Recognize and represent mathematical relationships using symbols and use number sentences with operational symbols to solve problems.

- a. Recognize that “=” indicates that the two sides of an equation are expressions of the same number.
- b. Recognize that “+” indicates the joining of sets and that “-” indicates the separation of sets.
- c. Write and solve number sentences from problem situations involving addition and subtraction, using symbolic notation for the missing value (e.g.,  $\square + 4 = 7$ ).
- d. Create problem situations from given number sentences involving addition and subtraction.

**Mathematical language and symbols students should use:**

sort, attribute, repeating patterns, growing patterns, skip count, number sentence, symbol, +, -, =

**Exploratory Concepts and Skills**

- Investigate situations with variables as unknowns and as quantities that vary.

**Standard III: Students will understand simple geometry and measurement concepts as well as collect, represent, and draw conclusions from data.**

*Objective 1:* Identify, describe, and create simple geometric figures.

- a. Name, create, and sort geometric plane figures (i.e., circle, triangle, rectangle, square, trapezoid, rhombus, parallelogram, hexagon).
- b. Identify geometric plane and solid figures (i.e., circle, triangle, rectangle, square, trapezoid, hexagon, rhombus, parallelogram, cube, sphere, cone) in the students' environment.
- c. Compose and decompose plane and solid figures (e.g., make two triangles from a square) and describe the part-whole relationships, the attributes of the figures, and how they are different and similar.

*Objective 2:* Identify measurable attributes of objects and units of measurement, and use appropriate techniques and tools to determine measurements.

- a. Identify the appropriate tools for measuring length, weight, capacity, temperature, and time.
- b. Measure the length of an object using nonstandard units and count the units using groups of tens and ones.
- c. Identify the value of a penny, nickel, dime, quarter, and dollar, and determine the value of a set of the same coins that total 25¢ or less (e.g., a set of 5 nickels equals 25¢).
- d. Tell time to the hour and half-hour.
- e. Name the months of the year and seasons in order, and use a calendar to determine the day of the week and date.

*Objective 3:* Collect, organize, and represent simple data.

- a. Collect and represent data using tables, tally marks, pictographs, and bar graphs.
- b. Describe and interpret data.

**Mathematical language and symbols students should use:**

circle, triangle, rectangle, square, trapezoid, hexagon, rhombus, parallelogram, cube, sphere, cone, penny, nickel, dime, quarter, dollar, January, February, March, April, May, June, July, August, September, October, November, December, winter, spring, summer, fall, data, value, graph, tally mark

**Exploratory Concepts and Skills**

- Compare objects using non-standard units.
- Interpret data from charts and graphs.

**Standard**

III: Students will understand simple geometry and measurement concepts as well as collect, represent, and draw conclusions from data.

# First Grade Fine Arts, Health, Physical Education, Science, and Social Studies Core Curriculum

Standard I:  
Students will  
develop a sense of  
self.

## **Standard I: Students will develop a sense of self.**

*Objective 1:* Describe and practice responsible behaviors for health and safety.

- a. Practice appropriate personal hygiene (e.g., bathe, wash hands, clean clothes).
- b. Describe the benefits of eating a variety of nutritious foods.
- c. Describe the benefits of physical activity.
- d. Describe substances that are helpful and harmful to the body.
- e. Practice basic safety and identify hazards.

*Objective 2:* Develop and demonstrate skills in gross and fine motor movement.

- a. Participate daily in short periods of physical activity that require exertion (e.g., one to three\* minutes of walking, jogging, jump roping).
- b. Perform fundamental locomotor (e.g., skip, gallop, run) and nonlocomotor (twist, stretch, balance) skills with mature form.
- c. Develop manipulative skills (e.g., cut, glue, throw, catch, kick, strike).
- d. Create and perform unique dance movements and sequences that strengthen skills while demonstrating personal and spatial awareness.

*Objective 3:* Develop and use skills to communicate ideas, information, and feelings.

- a. Recognize and express feelings in a variety of ways (e.g., draw, paint, tell stories, dance, sing).
- b. Express how colors, values, and sizes have been controlled in artworks to create mood, tell stories, or celebrate events.
- c. Sing a melody independently, with developing accuracy and a natural voice that is free from strain.
- d. Create simple rhythm, movement, and melody patterns with body percussion and instruments.

\* Some students may not be able to sustain activity for one minute due to various medical concerns.



**Standard II: Students will develop a sense of self in relation to families and community.**

*Objective 1:* Describe behaviors that influence relationships with family and friends.

- a. Explain how family members support each other.
- b. Describe tasks at home and school.
- c. Explain how families change over time.
- d. Recognize that choices have consequences which affect self, peers, and family.
- e. Describe behaviors that initiate and maintain friendships.

*Objective 2:* Describe important aspects of the community and culture that strengthen relationships.

- a. Practice democratic processes (e.g., follow family and classroom rules, take turns, listen to others, share ideas).
- b. Describe physical features surrounding the home, school, and community.
- c. Identify changes in the school and neighborhood over time.
- d. Identify and use technology in your home, school, and community (e.g., computer, TV, radio).
- e. Show respect for state and national symbols and patriotic traditions; recite the Pledge of Allegiance.

*Objective 3:* Express relationships in a variety of ways.

- a. Describe traditions, music, dances, artwork, poems, rhymes, and stories that distinguish cultures.
- b. Develop dramatic storytelling skills through flexibility in movement and voice, accurate sequencing, and listening and responding to others.
- c. Create and perform/exhibit dances, visual art, music, and dramatic stories from a variety of cultures expressing the relationship between people and their culture.

Standard II:  
Students will  
develop a sense  
of self in relation  
to families and  
community.

Standard III:  
Students will develop  
an understanding of  
their environment.

**Standard III: Students will develop an understanding of their environment.**

*Objective 1:* Investigate plants and plant growth.

- a. Observe and draw pictures of plants.
- b. Compare seeds of plants and describe ways they may be carried through the environment (e.g., wind, water, animals).
- c. Observe and describe plants as they grow from seeds.
- d. Identify how people use plants (e.g., food, clothing, paper, shelter).
- e. Investigate and report conditions that affect plant growth.

*Objective 2:* Investigate water and interactions with water.

- a. Observe and measure characteristics of water as a solid and liquid.
- b. Compare objects that float and sink in water.
- c. Measure and predict the motion of objects in water.
- d. Describe how plants and people need, use, and receive water.

*Objective 3:* Demonstrate how symbols and models are used to represent features of the environment.

- a. Use map skills to identify features of the neighborhood and community.
- b. Create representations that show size relationships among objects of the home, classroom, school, or playground.
- c. Identify map and globe symbols (e.g., cardinal directions, compass rose, mountains, rivers, lakes).
- d. Locate continents and oceans on a map or globe (i.e., North America, Antarctica, Australia, Pacific Ocean, Atlantic Ocean).

# **Facilitated Activities**





## ***New Math Core Curriculum Elementary CORE Academy 2007***

Since the 2003 adoption of Utah's Elementary Mathematics Core Curriculum, ideas such as coherence, focus, high expectations, computational fluency, representation, and important mathematics have become regular elements in discussions about improving school mathematics. As the next step in devising resources to support the development of a coherent curriculum, the National Council of Teachers of Mathematics (NCTM) released *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence*.

With NCTM's release of the Curriculum Focal Points and discussion regarding high expectations, it became important for Utah to revise the Elementary Mathematics Core Curriculum. The placement of concepts within the Curriculum Focal Points guided the placement of concepts within Utah's Core.

The Core has also been designed so that, wherever possible, the ideas taught within a particular grade level have a logical and natural connection with each other and with those of earlier grades. Efforts have also been made to select topics and skills that integrate well with one another and with other subject areas appropriate to grade level. In addition, there is an upward articulation of mathematical concepts and skills. This spiraling is intended to prepare students to understand and use more complex mathematical concepts and skills as they advance through the learning process.

The Core takes into account the psychological and social readiness of students. It builds from concrete experiences to more abstract understandings. The Core focuses on experiences with concepts that students can explore and understand in depth to build the foundation for future mathematical learning experiences.

The Elementary Mathematics Core describes what students should know and be able to do at the end of each of the K-6 grade levels. It was developed and revised by a community of Utah mathematics teachers, mathematicians, university mathematics educators, and State Office of Education specialists. It was critiqued by an advisory committee representing a wide variety of people from the community, as well as an external review committee. The Core reflects the current philosophy of mathematics education that is expressed in national documents developed by the National Council of Teachers of Mathematics, the American Association for the Advancement of Science, and the National Research Council. This Mathematics Core has the endorsement of the Utah Council of Teachers of Mathematics. The Core reflects high standards of achievement in mathematics for all students.



## *E-D-P Model* *Elementary CORE Academy 2007*

Each day good educators observe and interact with students to determine what course of action should be taken to achieve the best educational results for each learner. These observations, in many instances, are made with limited formal data. The E-D-P Model assists educators in the collection and use of information justifying implementation of practices. Many educators struggle with the ability to articulate and align teaching actions with student learning needs. The E-D-P Model is a method of aiding this articulation.

When assessing, it is important to know that correct answers do not necessarily mean students understand a concept. Conversely, incorrect responses may not indicate that a student hasn't learned a concept. It is important for educators to look for hidden understandings and possible misconceptions. Ongoing assessments, observations, and interviews may be necessary. When using this process, instructors should select assignments/tasks where students have opportunities to explain their understanding. Developing a tool to aid teachers in the collection of information and to assist them in determining student understanding has been the driving force in creating the E-D-P Model.

Our discussion begins with a description of the E-D-P Model. This model is based on a medical metaphor of Evaluation-Diagnosis-Prescription (E-D-P). It is important to understand the difference between three main types of assessment: diagnostic (usually occurring prior to instruction), formative (concurrently occurs with instruction), and summative (occurs at the conclusion of an instructional period). The E-D-P Model targets diagnostic and formative assessments. By conducting ongoing assessments and using this formative information, educators can effectively impact student learning and plan instruction to meet individual learning needs (McNamee & Chen, 2005).

### **Evaluation**

In classrooms across the country one may observe teachers interacting with students in a variety of ways. The Evaluation portion of the E-D-P Model provides teachers with a way to identify student learning as it relates to the standard and objective of instruction. As a teacher sees a particular student response she is able to identify understandings and misunderstandings.

EXAMPLE: Marcia responded with the answer of 12 when she was asked to add 14 and 8. Using Marcia's work, an instructor sees that Marcia needs instruction on renaming. Other conclusions for the same response may also be apparent. The Evaluation phase can then transition to the Diagnosis.

## Diagnosis

As the student response is investigated the instructor may need to ask questions or inquire regarding the reasoning used to formulate the response. This is similar to a physician, where if a pain in the abdomen is described, the doctor poses questions to the patient or performs a physical exam to determine the source of pain. Educators can employ a similar method as they determine the cause of the incorrect responses given by a student. The diagnosis may consume large amounts of time or be rapidly identified based on student work.

## Prescription

Once a learning need is Diagnosed/identified, renaming in the case of our example, the teacher can then determine what Prescriptive action should be taken. In the medical profession, the instructor or doctor has multiple medicines or treatments that can be prescribed. These multiple medicines affect individuals in different ways based on body chemistry and make up. This is also true with education in relation to learning styles. In education, teachers should have multiple activities, learning situations, or practice methods that can be prescribed to help students understand. In our example the teacher could prescribe numerous interventions to help our student understand the renaming concept. (e.g., place value practice, peer discussion groups focused on a single problem, one-on-one discussion about place value, manipulative extensions, etc.)



As teachers formalize the work that is done in a classroom they will be able to define the learning that occurs in a classroom and what learning should take place in the future. There can be a fine line between instruction and assessment when educators use quality formative assessment tasks to guide instruction and learning (Leahy, et al., 2005). The E-D-P Model encourages teachers to evaluate student work, diagnose learning needs, and determine the best prescription for continued growth in knowledge. Some teachers complete these three stages daily in classrooms around the nation without defining the process. This model provides educators a method to formalize current practice and aid them in the implementation process.

### Citations



Leahy, S., Lyon, C., Thompson, M., Wiliam, D. (November 2005). Classroom Assessment: Minute by Minute, Day by Day. *Educational Leadership*, 63:3, p.18-24.

McNamee, G.D., Chen, J.Q. (November 2005). Dissolving the Line Between Assessment and Teaching. *Educational Leadership*, 63:3, p.72-76.

Medical Metaphor T-Chart	
Physician	Educator
Why would a physician complete an Evaluation?	Why would an educator complete an Evaluation?
What would a physician use to make a medical diagnosis?	What would an educator use to make a learning diagnosis?
When evaluation and diagnosis are complete what kind of prescription would be given?	When evaluation and diagnosis are complete what kind of prescription would be given?

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## E-D-P Assessment Form

Evaluation: _____												
Students:		Diagnosis:						Prescription:				
Task:		Communication	Representation	Computation					Task #4	Comp. #6	Assignment #1	
1) Kyler		√-	√	√					X			
2) Jose		√	√+	√-							X	
3) Kyler		√+	√+	√+						X		
4) Sammy		√	√	√-							X	
5) Shelby		√-	√-	√-							X	



E-D-P Assessment Form	
Diagnosis:	Prescription:

\*Copy to a label and place on student work.



## E-D-P Assessment Form

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3) Kyler		√+	√+	√+						X		
4) Sammy		√	√	√-							X	
5) Shelby		√-	√-	√-							X	



E-D-P Assessment Form	
Diagnosis:	Prescription:

\*Copy to a label and place on student work.

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## *Mathematical Proficiency Elementary CORE Academy 2007*

How do educators know when a student “Gets It?” Elementary teachers interact with students daily using a variety of individual views regarding mathematical understanding. Success in mathematics is created through a student’s composite view and aptitude in five areas of mathematics. In the book, *Helping Children Learn Mathematics*, we are introduced to this composite view of mathematics learning. The term mathematical proficiency is used to describe what it means when a person successfully learns mathematics.

Mathematical proficiency includes five strands:

- 1) **Understanding:** Comprehending mathematical concepts, operations and relations-knowing what mathematical symbols, diagrams, and procedures mean.
- 2) **Computing:** Carrying out mathematical procedures, such as adding, subtracting, multiplying, and dividing numbers flexibly, accurately, efficiently, and appropriately.
- 3) **Applying:** Being able to formulate problems mathematically and to devise strategies for solving them using concepts and procedures appropriately.
- 4) **Reasoning:** Using logic to explain and justify a solution to a problem or to extend from something known to something not yet known.
- 5) **Engaging:** Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.

It is critical to understand that each of these strands is interwoven and interdependent. Various views of success in mathematics emphasize one aspect of mathematical proficiency with the expectation that the other areas of mathematical knowledge will follow. Success in mathematics comes through achieving mathematical proficiency, which includes each of the five strands.

We see parents, students, and educators focus on only one strand of proficiency, which results in memorized facts that do not necessarily lead to mathematical success. This narrow treatment of math does not provide the strong basis of mathematical learning that students need.

As students learn all the aspects of mathematical proficiency, learning will become stronger, more durable, more adaptable, more useful, and more relevant. It is difficult to master any one of these strands in isolation and is therefore essential to teach the strands in an interconnected method. Developing the strands together builds a student’s knowledge of any one strand through connected knowledge points that are memorable.

### Citation

*National Research Council. (2002). Helping Children Learn Mathematics. Mathematics Learning Study Committee, J. Kilpatrick and J. Swafford, Editors. Center for Education, Division of Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.*



## ***Building Academic Vocabulary Elementary CORE Academy 2007***

Teaching students vocabulary that will be encountered during the study of content provides a solid background for a positive interaction with that content. Building academic vocabulary is much more than simply placing words upon a word wall or providing a matching exercise with a definition and new terms.

Initially the selection of the terms to be provided to students takes effort and time. Educators should identify key words that are important to the understanding of specific content areas, and are included in the Core Curriculum. The background work of identifying the terms is critical to providing an accurate direction for the subsequent instruction. However, the key to the success of building academic vocabulary ultimately rests upon the quality of the instruction provided by the teacher. Marzano and Pickering provide the following six-step Process for teaching new terms.

The Six-Step Process for Teaching Academic Vocabulary:

- 1) Provide a description, explanation, or example of the new term.
- 2) Ask students to restate the description, explanation, or example in their own words.
- 3) Ask students to construct a picture, symbol, or graphic representing the term or phrase.
- 4) Engage students periodically in activities that help them add to their knowledge of the terms in their notebooks.
- 5) Periodically ask students to discuss the terms with one another.
- 6) Involve students periodically in games that allow them to play with the terms.

With guidance and monitoring students have the ability to generate their own description and representations of vocabulary terms provided. The ownership of this process is valuable in that students see the term as a new tool that aids their learning. An integral step in the process of learning new vocabulary is the student notebook. As students add new terms to their notebook they also refine and update descriptions, which deepens and clarifies their understanding of the content and the terms.

Creating a deeper understanding of vocabulary terms will provide students with multiple points of learning as they encounter new content. These points of learning will broaden the knowledge base and allow students to develop an awareness of the language of learning.

Citation

Marzano, R.J., Pickering, D.J., (2005). *Building Academic Vocabulary Teachers's Manual* ASCD, Alexandria, VA.



# **Math II-2**

## **Activities**

**Math Symbols**



# Don't Get "Bugged" About Missing Numbers

## Standard II:

Students will identify and use number patterns and properties to describe and represent mathematical relationships.

## Objective 2:

Recognize and represent mathematical relationships using symbols and use number sentences with operational symbols to solve problems.

## Intended Learning Outcomes:

5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

## Content Connections:

Language Arts III-6; generate many ideas, publish individual products  
Math IV-2; tell time to the nearest hour.

*Math  
Standard  
II*

*Objective  
2*

Connections

## Background Information

Children have learned that you can add and subtract numbers to find answers. What they don't know is that sometimes you have the answers but you don't have the question. In order to figure out the question, children need to have a good understanding of addition and subtraction. Addition is taking two groups, putting them together and counting. Subtraction is starting with one group, breaking that group into two groups, and then either counting one group or comparing the two groups to find the difference. If students have a good foundation in that knowledge, they may be ready to be introduced to missing numbers.

## Research Basis

Armstrong, T. (1994). *Multiple Intelligences in the classroom*. pp.65-85. Thousand Oaks, CA. Corwin Press

There should be materials in the classroom that provide opportunities for students to manipulate, build, or encounter other hands-on experiences.

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). *Classroom Instruction that Works*. Research and Theory Related to Cooperative Learning, pg. 85-88. Alexandria, VA. McRel

This book supports many different teaching methods that are successful in today's classroom. Cooperative learning, hands on activities, and multiple intelligences are among the topics covered in this book.

## Invitation to Learn

Begin by reading the book *Are You A Ladybug?* After reading the story discuss with the students what ladybugs are famous for. They are famous for their spots. Spots are possibly ladybugs, most prized possession because getting spots is the last stage of their development. Ask students if they have ever wondered if ladybugs could lose their spots. If they could, lose their spots, they would desperately want to have them replaced. Suggest that spots could be replaced but only if the ladybug knew how many were missing. Tell the students we are going to imagine some ladybugs have lost their spots and need our help to get them back. We will learn how to help ladybugs figure out how many spots they are missing.

## Instructional Procedures

### Materials

- ☐ Construction paper ladybugs
- ☐ Black dots
- ☐ *Are You a Ladybug?*
- ☐ Math Journal
- ☐ *Lucky Ladybug*



1. To each group of students, pass out a container with black circles, ladybug spots, and a pre-made ladybug with two wings. Only one wing has spots on it, the other one is missing the spots.
2. Tell the students that some poor little ladybugs have landed in our room and they have a problem.
3. Have the students look at the ladybug and see if they can tell what the problem is.
4. When they decide that the ladybug seems to be missing some spots tell them that they can help this ladybug get their spots back.
5. In order to do this they need to look under the wings of the ladybug. If they look very carefully they can see a number written on the ladybug's back. This number tells the total number of spots a ladybug has earned.
6. Tell students that they can use the spots and work as a team to figure out how many spots the ladybug is missing.
7. Walk around the room as the students are working and give guided questions where necessary.
  - Possible guided questions: What do you know about this ladybug? How many spots should the ladybug have all together? How many spots does the ladybug have that we can count? What could you do after you count the number of spots you can see?

8. When the team has figured out the missing number of spots, they draw the ladybug in their math journal and explain how they helped the ladybug.
9. Have teams explain what they did to help the ladybug to the class.
10. Repeat with different ladybugs and challenge them to see if they can help the ladybug faster.

## Symbol Soup

## Invitation to Learn

Begin by reading *Twizzlers™ Shapes and Patterns* to the students.

## Instructional Procedures

1. Bring the class to the front of the room.
2. Tell students that today we are going to make soup, a special kind of soup: shape soup.
3. Ask the students what ingredients they think might be put in shape soup.
4. Brainstorm ingredients and draw them on the board.
5. Give students a *Shape Soup* recipe paper and have them create the many, varied and unusual ingredients that might make great soup.
6. Give them two minutes to draw eight shapes. They may color their shapes if they finish early.
7. Have them decide what they think their best ingredient is and circle it.
8. Give students a 4 x 4 piece of laminated paper and have them make and cut out the shape they circled. The shape needs to be as big as accurate as possible.
9. Add their shape ingredients to a soup pot and stir the soup. If you have magnetic white boards, give students a magnet strip and have them stick it to one side of their shape.
10. Explain the purpose of the shapes by doing a role-play.
11. Pick a group of students to be in the role-play and explain the role-play to them in the hall.
  - One of the students will be the teacher. The teacher will tell the group of role-players to line up. You are going to line up



### Materials

- ☐ *Shape Soup* recipe paper
- ☐ 1-inch magnet strips
- ☐ 4 x 4 squares laminated construction paper
- ☐ Soup pot/ladle
- ☐ Paper soup bowls
- ☐ *Twizzlers™ Shapes and Patterns*

with them as a student, but when everyone is in line, you are going to say that you forgot something and have to go get it. You will ask whoever is standing in front and in back of you to save your place. Tell the students that if you ask them to save your place they should say yes but as soon as you get out of line they should move up and take your place.

12. Go back into the room and have the “teacher” go up to the front and tell the group to line up.
13. Line up with the students you picked to help.
14. Pretend you forgot something so you have to get out of line to get it.
15. Ask the students in front and behind of you to save your place.
16. Leave the line and go get the thing you forgot. When you return, act upset because your place is gone and you don’t know where you were supposed to be.
17. Redo the role-play but this time when you leave, put something in your place like a chair or a book.
18. Explain that the chair, or book, represents you while you are gone, and when you get back you will take the object away and get back in place.
19. Leave to get what you forgot and come back happy because you can take your place back.
20. Explain that numbers need something to hold their place in line also. Any shape can be used to represent a number that is missing from the sentence.
21. Explain that the symbol soup is full of shapes that can represent a number.
22. Write any math sentence on the board. Have the students put their heads down and close their eyes.
23. While their eyes are closed, put a shape from the soup over any number.
24. Tell the students to put their heads up and figure out what number the shape is representing.
25. Lift the shape off the number to see if they were right.
26. Do many examples.
27. For a challenge, have students close their eyes while you write the whole sentence so they have to figure out the missing number.

## The Case of the Missing Number

### Invitation to Learn

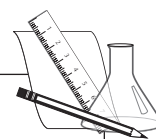
Begin by reading *Bertie Was a Watchdog* to the students. Discuss what a burglar is.

### Instructional Procedures

1. Bring the class to the front of the room.
2. Write an addition sentence with a missing number on the board. Use a shape to represent the missing number.
3. Tell students that there is a burglar in the room. The burglar has stolen a number.
4. Tell students that when a number is stolen we need a number detective to find the stolen number.
5. If they can figure out which number has been stolen, and is now missing, they can solve the case of the missing number.
6. Tell students to use what they have learned to figure out what number is missing. (Start with the number they know and count up to the total.)
7. After someone solves a case ask him or her to explain how he or she solved it.
8. Explain that today half the class is going to be burglars and the other half is going to be number detectives.
9. Split the class in half.
10. Burglars need a white board, marker, eraser, and shapes (magnet shapes from soup or pattern blocks). Detectives need a detective notebook (math journal).
11. The detective half of the class will go to their office (their desks) and begin taking notes on the case (writing the date and explaining their job).
12. The burglars will go to their desk write an addition equation. After the equation is written, they will cover it with a shape. The number covered is the number they have stolen. (If you have struggling students you may want to give them some printed equations and have them copy the equation and cover one number.
13. After each burglar has an equation written with one number covered, the detectives are sent out. Each detective will take

### Materials

- ☐ Soup shapes from previous lesson or Pattern blocks
- ☐ Math journals
- ☐ *Bertie Was a Watchdog*



their journal to any burglar and try to solve the case of the missing number by writing the equation with a shape for the missing number.

14. Detectives figure out the missing number and write it in the shape.
15. Detectives tell their burglar what number they think has been stolen and the burglar must show them if they were right or wrong.
16. The detective then reports back to the office and writes down the case information. For example: if the case was solved the detective will write how they solved the case and caught the burglar. If the detective got the wrong number, then they write that they thought the missing number was “x” but it was really “y” so the burglar got away.
17. After a few cases, have the students switch roles so the detectives are now the burglars and the burglars are now the detectives.

## Assessment Suggestions

- Ladybug worksheet.
- Math journals are a great assessment for diagnosis of understanding.

## Curriculum Extensions/Adaptations/Integration

- *Bertie the Watchdog* could be used for a language arts lesson highlighting the different sounds for words with “ed” endings.
- Read *The Grouchy Ladybug*. Make a floor mat clock out of a round, plastic tablecloth. Use velcro so students can practice attaching numbers 1 – 12. Make an hour and minute hand out of poster board. As you read the story, have students take turns making the time on the clock. You can also ask questions after the story is over. If the ladybug talked to the skunk at 11 o'clock and talked to the lobster an hour before that, show me what time the ladybug talked to the lobster.
- Give students cards with math symbols and words written on them and see if they can categorize them based on things they have in common.

## Family Connections

- Make detective books to send home and challenge students to try and trick the family.

## Additional Resources

### Books

*Are You A Ladybug*, by Judy Allen and Tudor Humphries; ISBN 0-7534-5603-6

*Twizzlers™ Shapes and Patterns*, by Jerry Pallotta; ISBN 0-439-34053-5

*The Shape of Things*, by Dayle Ann Dodds; 1-564202-698-1

*The Grouchy Ladybug*, by Eric Carle; 978-0064434508

*Counting Crocodiles*, by Jody Sierra and Will Hillenbrand; ISBN 0-15-200192-1

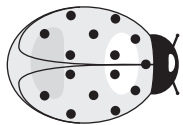
*Bertie Was a Watchdog*, by Rick Walton; ISBN 978-0744580181

### Web sites

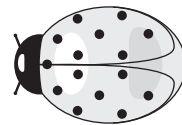
<http://bbc.co.uk/schools/laac/numbers/ch1.shtml>

<http://www.kidzone.ws/math>

<http://www.eduref.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Mathematics/Measurement>



# Lucky Ladybug



1. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

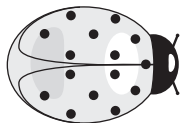
2. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

3. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

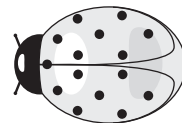
4. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

5. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

6. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



# Lucky Ladybug



1. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

2. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

3. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

4. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

5. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

6. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



# Shape Soup




# Being Equal is No Monkey Business

## Math Standard II

## Objective 3

### Connections

#### Standard II:

Students will identify and use number patterns and properties to describe and represent mathematical relationships.

#### Objective 3:

Recognize and represent mathematical relationships using symbols and use number sentences with operational symbols to solve problems.

#### Intended Learning Outcomes:

5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

#### Content Connections:

Language Arts III-6; generate many ideas, publish individual products

## Background Information

Students need to understand that an equation is a relationship between numbers where both sides of the equation are equal, or the same. The mathematical symbol for that relationship is represented by the equal (=) sign. Students also need to understand that it is possible that a number sentence could not be equal on both sides. Students need opportunities to see both equations that are true and not true and develop thinking strategies to help them determine whether or not an equation is equal or not equal.

## Research Basis

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). *Classroom Instruction that Works*. Research and Theory Related on Identifying Similarities and Differences, pg. 14-17. Alexandria, VA. McRel

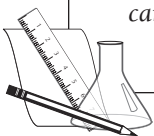
Researchers have found identifying similarities and differences to be mental operations that are basic to human thought. There is strong research base supporting the effectiveness of having students identify similarities and differences with and without direct input from the teacher. Both student directed and teacher directed activities have their place in the classroom.

Association of State Supervisors of Mathematics & Eisenhower Network, (2002). *Edthoughts: What We Know About Mathematics and Learning*, pg. 73-99. Aurora, CO. McRel

This section of the book discussed how teachers can improve student learning by teaching metacognitive strategies which include: connecting newly learned information with that already known; carefully choosing appropriate thinking strategies; and planning, monitoring and judging the effectiveness of the thinking processes.

### Materials

- ☐ Banana Runts
- ☐ Monkey Math Balance scale
- ☐ Equal and Not Equal cards
- ☐ Addition sentences
- ☐ Tree one and tree two cards



## Invitation to Learn

Split the class into pairs and give each pair an odd number of the banana Runts. Pairs work together to find a way to split the bananas so each will get the same amount. Since an odd number can't be evenly split, they need to think of possible solutions both can agree on.

## Instructional Procedures

1. Bring the class to the front of the room.
2. Pick a boy and girl to come to the front of the room. They will be the king and queen of the jungle. Place a crown on each of their heads.
3. Explain to the students that there are rules in the jungle and the king and queen will help us figure out one of the rules. They won't tell us the rule but they will show us things that follow the rule. They will also show us things that don't follow the rule.
4. The king will put things that follow the rule on tree one. The queen will put things that do not follow the rule on tree two.
5. Place, or draw, tree one and tree two on the board.
6. Have simple equation cards written on papers for the king and queen to hang up. Possible equations for tree one are any equations that are true i.e.  $1 + 1 = 2$ ,  $3 = 3$ ,  $2 + 1 = 3$ ,  $4 + 5 = 9$ . Possible equations for tree two are any equations that are not true i.e.  $1 = 5$ ,  $2 + 2 = 1$ ,  $2 + 3 = 4$ .
7. Begin by handing the king a true equation to put on tree one.
8. Tell the students that they are not going to try to guess the rule right away. First they need to think. Ask them to think about what they notice about the paper the king is putting on tree one.
9. Give a false equation to the queen. Ask students to think about what they notice.
10. Repeat the process by giving the king and queen another equation, each time focusing the students on what they notice.
11. After three papers are hanging on each tree, ask the students if they know the rule. Instruct them to get with a partner and discuss what they think the rule is.

12. After a minute, invite students to prove they know the rule by stating an equation that follows the rule and could be written on tree one.
13. If the student gives a true equation, add it to tree one. Have the student give a false equation for tree two.
14. Let a few more students prove they know the rule.
15. Have students define the rule. A possible definition might be that in the jungle the king and queen only allow equations that are equal. They don't allow equations that are not equal.
16. Explain that when an equal sign is used that means that both sides of the equal sign have the same amount. If both sides have the same amount they are equal. If both sides don't have the same amount they are not equal.
17. Bring out *Monkey Math*. Put up the "Equal" and "Not Equal" category cards.
18. Put the number six banana token on one of the monkey's arms and have the students notice what happens to the eyes and arms when one arm has some bananas and another arm doesn't.
19. Put a number four banana token on the other arm.
20. Write the math equation  $6 = 4$ . Ask the students if the king would allow this math equation in the jungle?
21. Have a student write the equation  $6 = 4$  under the "Not Equal" category.
22. Take banana tokens off and try a new equation. Place the number four banana token on one side and then ask the students what should be placed on the other side to follow the king's rule.
23. Try students' suggestions and determine if an equation could be written under the "Equal" category card. Then ask if there is another way to make an equation that would follow the rule.
  - For example: One student recommends the number four token. Put the number 4 token up and write  $4 = 4$ . Have students observe how the monkey looks when the rule is being followed. Ask if something could be used besides four. Lead them to discover two 2s would also fit the rule as well as a 3 and a 1. Write each math sentence under the "Equal" category card.
24. Tell each group go to their seats with a *Monkey Math worksheet*, two category cards labeled "Equal" and "Not Equal", and a pile of equations to test.

25. Two students need to line up the banana tokens in order from least to greatest, set up the category cards, and test each equation (one at a time).
26. The group decides whether the equation fits the rule of the jungle and goes in the “Equal” category or does not follow the rule and goes in the “Not Equal” category.
27. Students write the sorted equations in their math journal.

## Assessment Suggestions

- Give students an equation. First have them decide whether the equation is equal or not equal and then explain why.
- Give students an equation that is not equal and have them fix it so that it is equal. In order to do this they cannot change any numbers but they may add any amount to either side of the equation.

## Curriculum Extensions/Adaptations/Integration

- Take the banana tokens and have students put them in order from least to greatest, face down, so they can't see the numbers.
- Teach, and as a class perform, *The Banana Split*. The banana split is a skit that is set to the theme song of “2001- A Space Odyssey.” You start with your back to the audience and a banana tucked into your right armpit with your left hand so no one can see it. As the music starts you stand with your head down until you hear the music build in 3 horn blows. For each of the three blows you do a three-step 180-degree turn. Right foot steps out to the right on blow one. Left foot does a 180° turn on blow two. Right foot steps out on count three. On the next count the left hand raises to the left diagonal and left foot steps out to present the banana. Hold for the rest of the count of eight. When the drums start the right arm bends like you are tickling your armpit like a monkey while you hop from foot to foot. This completes the monkey look. When the music changes to the slow three beats bring the banana in front of you and peel it. On the fourth beat raise the peeled banana to the left diagonal again. When the drums start hop like a monkey again. The next three beats you start with the banana raised to the left diagonal and in three counts dramatically bring the banana to the front.

This time when the music crescendos, stick the banana in your mouth and eat as much of the banana as you can. Keep eating until the big cymbal crash near the end of the music. At that point raise the banana peel back up to the left diagonal. Wave the peel until the big finish. At the last beat of the music throw the banana peel to the ground or in a garbage.

- Take the equations from the activity that were not equal and find a way to make them equal. The rule is that you can't change any numbers that are already there, but you can add numbers.
- Give each team four stacks of cards numbered 1 – 10. Have a student draw four cards to see if they can make an equation that fits the rule.
- Make equation cards of both addition and subtraction facts. Make cards with different equations that have the same answer and have kids create their own categorization for the cards.
  - For example: you may have  $4+1=5$ ,  $3+2=5$ ,  $5+0=5$ ,  $10-5=5$ ,  $9-4=5$ ,  $13-8=5$ , for the number five. Students could make any categories such as: has a zero, addition, subtraction, equals a certain number, has a number larger than ten, all numbers are less than ten, has one even number, has one odd number, has two even numbers, etc. Do the same for other numbers.
  - You can also include some equations that are false.
- Sing, or read, *Five Little Monkeys Jumping on the Bed*. Ask the students if they ever wondered what happened to the monkeys that fell off the bed. Where are the monkeys with the broken heads? Write a story about where the monkeys with broken heads go and what happens to them. Did they ever jump on the bed again or did they learn their lesson.
  - Write all the addition sentences that show monkeys jumping on the bed plus monkeys with broken heads equalling five monkeys.

## Family Connections

Find places in the house where things are balanced.

- For example: One candlestick on each side of the table, three chairs on one side of the table and three on the other side, etc. Send home a disposable camera. Have each student take a picture of one thing that shows equal and one thing that shows not equal. Make an Equal, Not Equal class book that can later be sent home to read with the family.

## Additional Resources

### Books

*Five Little Monkeys Jumping on the Bed*, by Eileen Christelow; ISBN 1-590-99459-x

*Dinosaur Deals*, by Stuart Murphy; ISBN 978-0064462518

## Equal and Not Equal Cards

Equal

Not Equal

## Equal and Not Equal Cards

$$5 = 3 + 4$$

$$9 = 7 + 2$$

$$9 = 7 + 4$$

$$7 = 5 + 2$$

$$3 + 7 = 8$$

## Equal and Not Equal Cards

$$5 + 3 = 8$$

$$2 + 6 = 7$$

$$1 + 7 = 8$$

$$1 + 1 = 2$$

$$3 = 3$$

## Tree 1 and Tree 2 Cards

$$4 + 5 = 9$$

$$7 + 3 = 10$$

$$2 + 9 = 11$$

$$1 = 5$$

## Tree 1 and Tree 2 Cards

$$2 + 2 = 3$$

$$2 + 3 = 4$$

# Center Time

## Standard II:

Students will identify and use number patterns and properties to describe and represent mathematical relationships.

## Objective 2:

Recognize and represent mathematical relationships using symbols and use number sentences with operational symbols to solve problems.

## Intended Learning Outcomes:

5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

## Content Connections:

Math II-1, counting by fives and tens to 100

## Math Standard II

## Objective 2

Connections

## Background Information

These activities are to be taught to the whole class or with small groups and then practiced independently in centers, stations, or workshop time. Students should have been introduced to the concept of missing numbers and balanced equations in previous lessons. By using manipulatives and having opportunities to practice, students develop a better understanding of these concepts.

## Research Basis

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). *Classroom Instruction that Works. Research and Theory Related to Practice*, pg. 66-71. Alexandria, VA. McRel.

This section of the book states the importance of practice and how it is necessary for gaining knowledge of any type. The two generalizations from the research on practice are: that mastering a skill requires a fair amount of focused practice, and while practicing, students should adapt and shape what they have learned using manipulatives and hands on activities.

National Association for the Education of Young Children. (1987). *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8*. Washington, DC: NAEYC.

Most six-year-olds and many seven- and eight-year-olds may be more mature mentally than physically. Therefore, hands-on activity and experimentation is more appropriate for this group than fatiguing mechanical seatwork.

## Invitation to Learn

Begin by reading the book *Equal Shmequal*. Talk about the different kinds of equal that the book illustrates. Make a connection from the

## Materials

- ☐ *Equal Shmequal*
- ☐ Dice
- ☐ Pipe Cleaner
- ☐ *Tug of War Number Line*
- ☐ Large plastic beads



teeter-totter to the *Monkey Math* balance scale. Explain that in a game of tug of war the teams need to be equal.

## Instructional Procedures

### Tug of War

1. This game can be played in pairs or small groups split in two teams.
2. Give each player ten beads.
3. Give each pair one pipe cleaner with the middle marked and a *Tug of War Number Line*. The pipe cleaner symbolizes the tug of war rope. Match the middle marking with the zero on the number line.
4. Tell students that when the middle of the pipe cleaner is at zero, both sides are equal. If both sides are not equal the rope has to be slid to the number that show how many more beads are on that side. The goal is to get the sides to be equal.
5. Player one rolls a die and puts that many beads on their side of the pipe cleaner. Then they slide the pipe cleaner that many spaces on the number line toward them.
6. Player two is trying to get an equal amount so they want to roll the same number.
7. Player two rolls the die and puts that number of beads on their side.
8. Player two slides the pipe cleaner that many spaces back toward them.
9. Before player one rolls again, ask them what number they need to roll to make the teams equal.
10. Player one rolls again and the game continues.
11. If a player runs out of beads and they never make both sides equal, then the teacher wins. If the players make the teams equal, which puts the pipe cleaner at zero, the students win.
  - Example: Player one rolls a three and places three beads on their side of the pipe cleaner. They also slide the pipe cleaner three spaces on the number line so the middle marking is now on the number three. Player two rolls a four. They put four beads on their side of the pipe cleaner and pull the pipe cleaner four spaces back toward them which puts the middle mark on the number one on player two's side. They are not equal so player one rolls again. Before player one rolls, ask

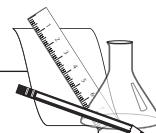
what number they need to roll to make the teams equal. The game continues until the players run out of beads or the pipe cleaner is on zero. If the players can make the sides equal before running out of beads they beat the teacher.

### Monkeys on a Vine

1. Place 16 dominoes, eight matching, in the center of the work area face down. A matching domino is a domino with the same total number of dots in a different configuration.
2. Players take turns picking two dominoes at a time to see if they can find two dominoes that match.
3. If a player picks a domino match, one domino is placed on each side of the monkey vine to represent leaves on the vine. Draw the domino and write the equation underneath, (start at the bottom of the vine).
4. Put the matching dominoes in a discard pile.
5. Move the monkey so it is hanging by the equation. Move the monkey up the vine each time a domino equation is filled in.
6. The game ends when the dominos are all gone or one player has domino equations to the top of the vine. The player with the highest monkey on the vine wins.

#### Materials

- ☐ 16 dominoes per pair
- ☐ *Monkey Vine*
- ☐ Monkeys

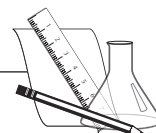


### Hit and Miss

1. This game can be played in pairs or small groups split in two teams.
2. Give each player a stack of numeral cards 0 – 12.
3. Before a player takes a turn they say any number they want from 1 – 12. Students need to write their number down so they don't forget.
4. The first player rolls the die to see what number to start on.
5. The first player starts with the number rolled and counts up till they get to the number stated.
6. When the first player figures out the amount needed, they find that number card and put it in a discard pile.
7. If the player doesn't have the card needed, their turn is over, they don't get to discard any cards, and it is now the next player's turn.
  - Example. A student states the number 10. They roll the die and get a two. From two, they need to count up to figure how many more are needed to get to 10. If they have the number

#### Materials

- ☐ 1 die
- ☐ *Number cards 0 - 12*



eight card, they would get rid of that card by putting it in a discard pile. If they don't have the number eight card, their turn is over and they don't get to discard any cards.

8. The game is over when a player gets rid of all of their cards. If time runs out the winner is the person who has the least amount of cards left.
9. Students may use counters to help them figure out the missing number.
10. This activity could also be pushed to the symbolic level by requiring students to write the equation. Start with the number they state being equal to the number they roll plus the missing number, e.g.,  $10 = 2 + 8$ .

### Peek-a-Boo Pennies

#### Materials

- ☐ Piggy Bank
- ☐ Number cards 6-12
- ☐ 12 pennies per pair
- ☐ Paper cup
- ☐ Peek-A-Boo Record Sheet



1. Pair up students and provide each pair with a piggy bank, 12 pennies, a paper cup, and a *Peek-A-Boo* record sheet.
2. One student draws a number card. This is the number of pennies we will have in our piggy bank for 1 – 5 turns.
3. Partner one gets the amount of pennies equal to the number on the card and puts them in the piggy bank.
4. Partner two closes their eyes.
5. Partner one takes the paper cup and covers any amount of the pennies.
6. When partner one has the desired pennies covered they say, “Peek-A-Boo” which signals partner two to open his/her eyes.
7. Partner two counts the number of pennies showing and records that number on the *Peek-A-Boo* activity sheet.
8. Then partner two determines how many pennies are hiding under the cup and writes the number in the square.
9. Partner two finishes the sentence and asks partner one to check their answer.
10. If partner two was correct then partners switch places and the game continues. If partner two was wrong, they have to close their eyes while partner one hides a different number of pennies.
11. An extension to this activity is to use all nickels or all dimes instead of pennies. This would reinforce the concept of counting by fives or tens.

## Genie Boot Camp

1. This activity can be played in small groups or with the whole class.
2. Each student needs a white board, marker, and eraser.
3. One student draws a *Genie Lamp Number Card*, to be used as the total amount wished for.
5. The teacher shows a stack of Unifix cubes, any amount less than or equal to the amount on the card, and says, “I wish I had \_\_\_\_ (the number on the card).”
6. Students count the number of cubes that the teacher has and writes that on their board.
7. Next they write a plus sign and put a pattern block down to represent the missing number.
8. Students finish the sentence by writing an equal sign and the number on the card.
  - For example: If 9 is the number card picked, the teacher might show 6 Unifix cubes. Students write  $6 + \_ = 9$
9. Students start with the number of Unifix cubes and count up to the total.
10. When they decide the answer, they pick up a pattern block, secretly write the missing number, and put the pattern block on top of their answer.
11. Students keep answers hidden until the teacher says, “Show me how to get my wish.”
12. Students then remove the symbol to reveal the missing number.
13. Students who have the right answer get a “wish” (wishes can be any object. Counters, pompoms, small treats, etc). The first student to get three wishes wins the game.
14. A new game is started by a student drawing a new card to get a different total to wish for.

### Materials

- ☐ Dry erase board
- ☐ Marker
- ☐ Eraser
- ☐ *Genie Lamp Number Cards* 1-12
- ☐ 12 Unifix cubes
- ☐ Pattern blocks
- ☐ Wishes



## Going bananas

1. Split group into pairs
2. Give each pair a *Monkey Math balance* and a *Going Bananas* worksheet.
3. Instruct each pair to put a certain banana token (greater than five) on one side of the scale.

### Materials

- ☐ *Monkey Math balances*
- ☐ Banana Tokens
- ☐ *Going Bananas*



4. Tell them they have sixty seconds to come up with as many ways to balance the scale as possible.
5. Students need to record their equations when they come up with a balance.
6. The team that comes up with the most equations in sixty seconds wins that round.
7. Begin a new round by changing the single banana token.
  - For example: Tell the students to put the number nine banana tokens on the right side of the scale. Start the timer and students can pick tokens to try to balance the scale. If the scale balances, they need to write the equation that matches.  $3+6=9$ ,  $4+5=9$ ,  $8+1=9$ ,  $7+2=9$ .

### Materials

- ☐ Missing Dots
- ☐ Five “X’s”
- ☐ Five “O’s”
- ☐ Tic-Tac-Toe game board
- ☐ Paper fasteners
- ☐ 2 x 2.5 inch papers



### Tic-Tac-Toe Where Did the Dots Go?

1. Copy and cut the *Missing Dots* papers into rows.
2. Cut 2 x 2.5 inch papers that can be connected with a paper fastener to create a flap over one of the sections. This creates a missing part.
3. Divide group into two teams.
4. Teams determine who are “X’s”, who are “O’s” and who goes first.
5. Teacher picks one student from each team to race.
6. Teacher shows a *Missing Dots* strip so both players can see.
7. The first player to say the missing part gets to place their game piece on the tic-tac-toe board.
8. Two new players are selected and the game continues.
9. The first team to get three in a row wins. If no one gets three in a row then the teams tie.
10. Clear the board and begin a new round.

### Assessment Suggestions

- Observing students throughout the activities is an effective informal formative assessment for teachers.
- Some of the activities also have worksheets that students complete while working on the activity. These worksheets are an excellent source of assessment.

- Students could be asked to respond to questions in their journal that would give evidence of understanding. Some possible questions are:
  - If I had two piles of bananas with three bananas in one pile and four in the other, that would be seven bananas altogether. What is another way I could have seven bananas in two piles?
  - I know I have eight toy cars but I can only find three. How many are hiding in my room somewhere?

## Curriculum Extensions/Adaptations/Integration

- For the game *Hit and Miss*, you can pick a number between 5 and 11 and have students find the combinations of the two cards that total that number. With the two cards students make a sandwich with the numbers facing out. The challenge is to name the number on the other side of the sandwich when given the total of both sides.
- All math sentences may be recorded in a math journal rather than the activity sheets.

## Family Connections

- Send home Tug of War pipe cleaners, beads, and a die for the family to play together at home.
- Students make their own missing dots cards to take home and play Tic-Tack-Toe with their family.
- Send home a *piggy bank* and paper cup. Students need to find their own pennies at home and play Peek-A-Boo pennies with someone in their family.

## Additional Resources

### Books

*Equal Shmequal*, by Virginia Kroll; ISBN 13-978-1-57091-892-6

### Web sites

<http://www.specificurl.com>

## Tug of War Number Line



## Tug of War Number Line



# Monkey Vine - Monkeys



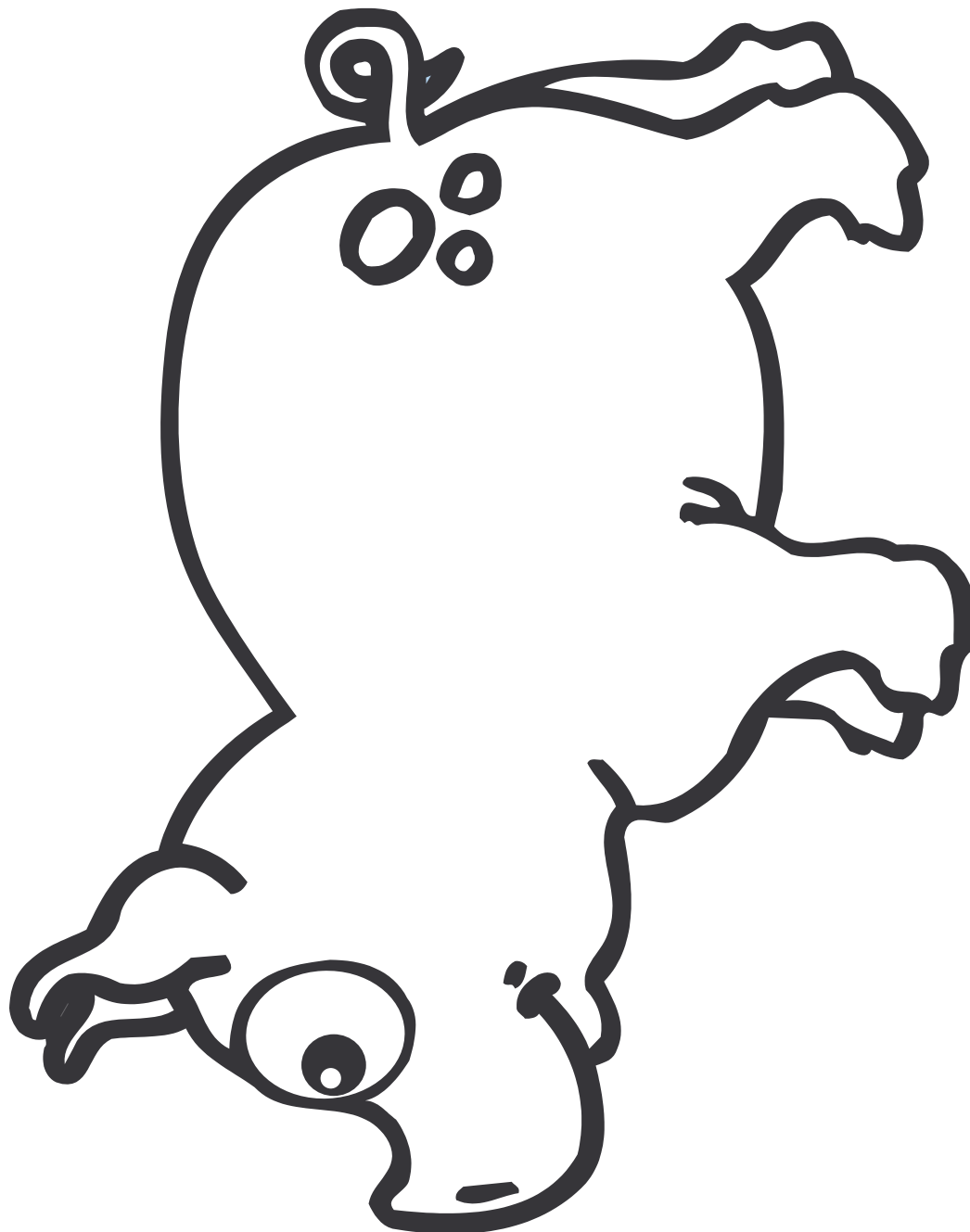
# Monkey Vine

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## Number Cards 0-12

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4	5	6	7
8	9	10	11
12			

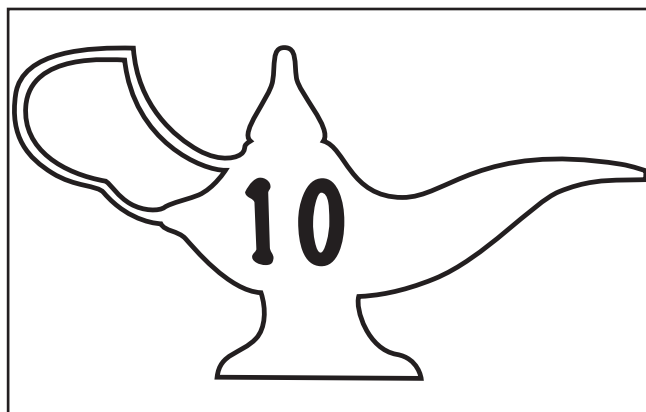
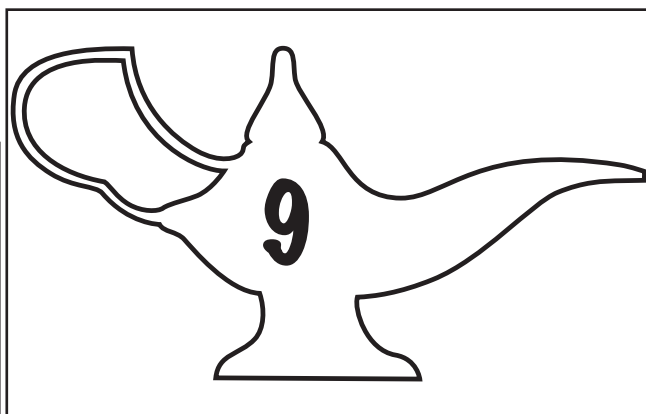
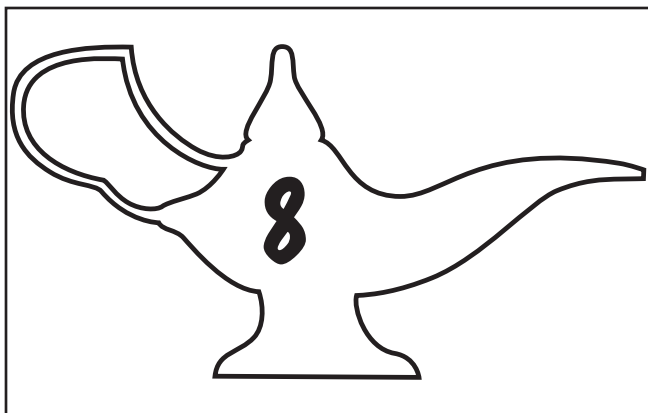
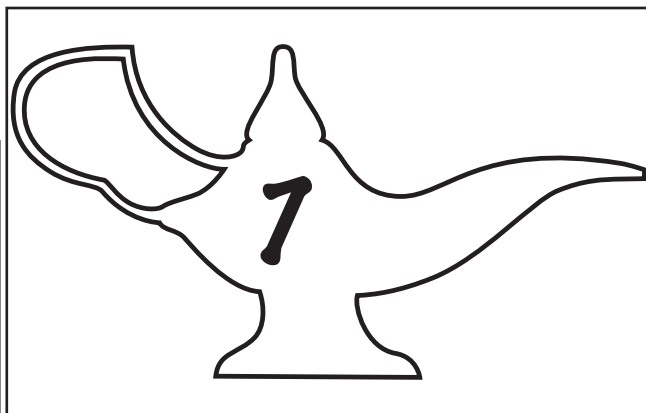
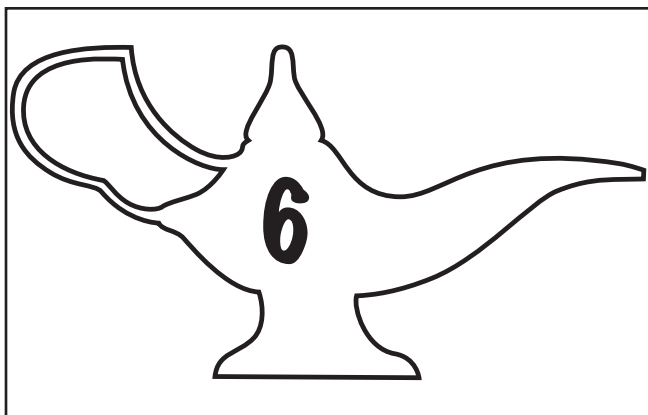
## Piggy Bank



# Peek-A-Boo Record Sheet

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# Genie Lamp Number Cards 6-10





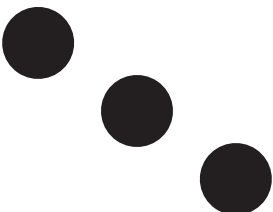


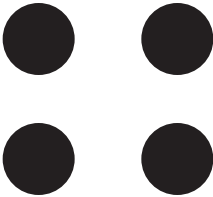
# Going Bananas

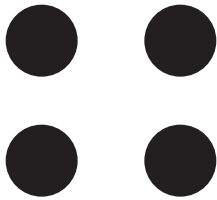














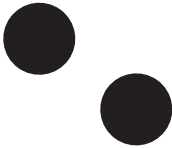
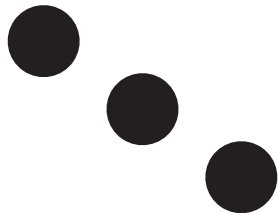
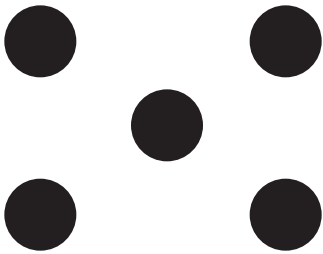










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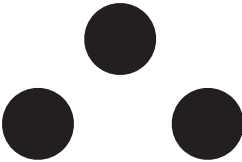
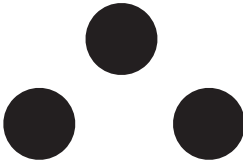

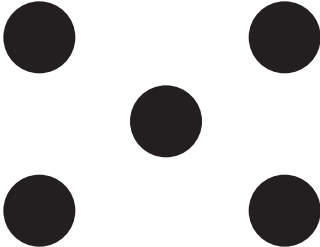
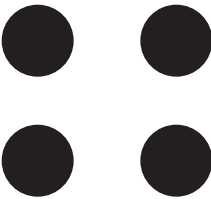

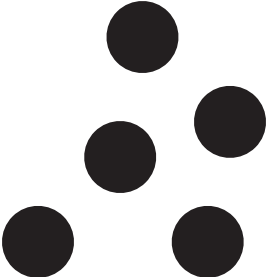

















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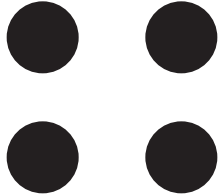
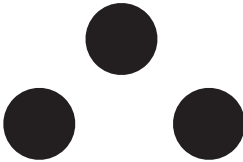

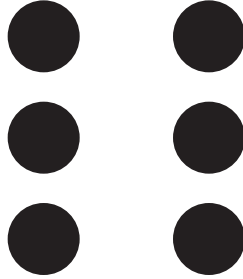
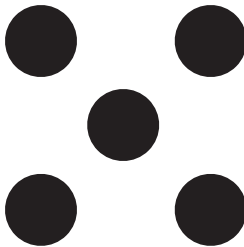

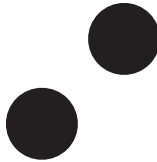
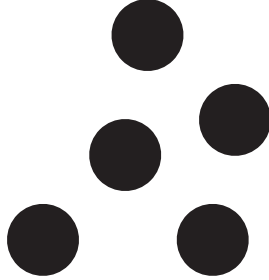
















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## Missing Dots

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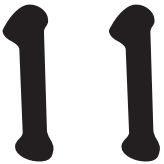






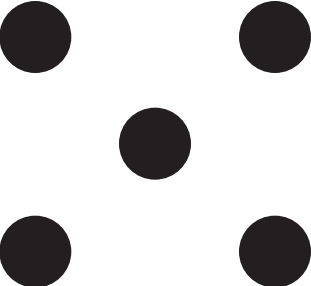
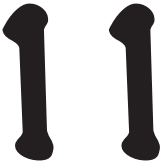
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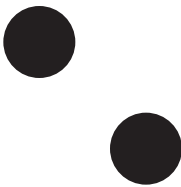












































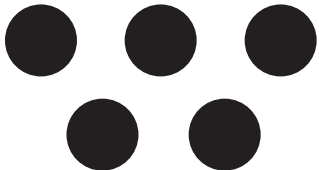














































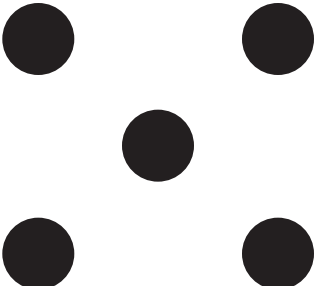











































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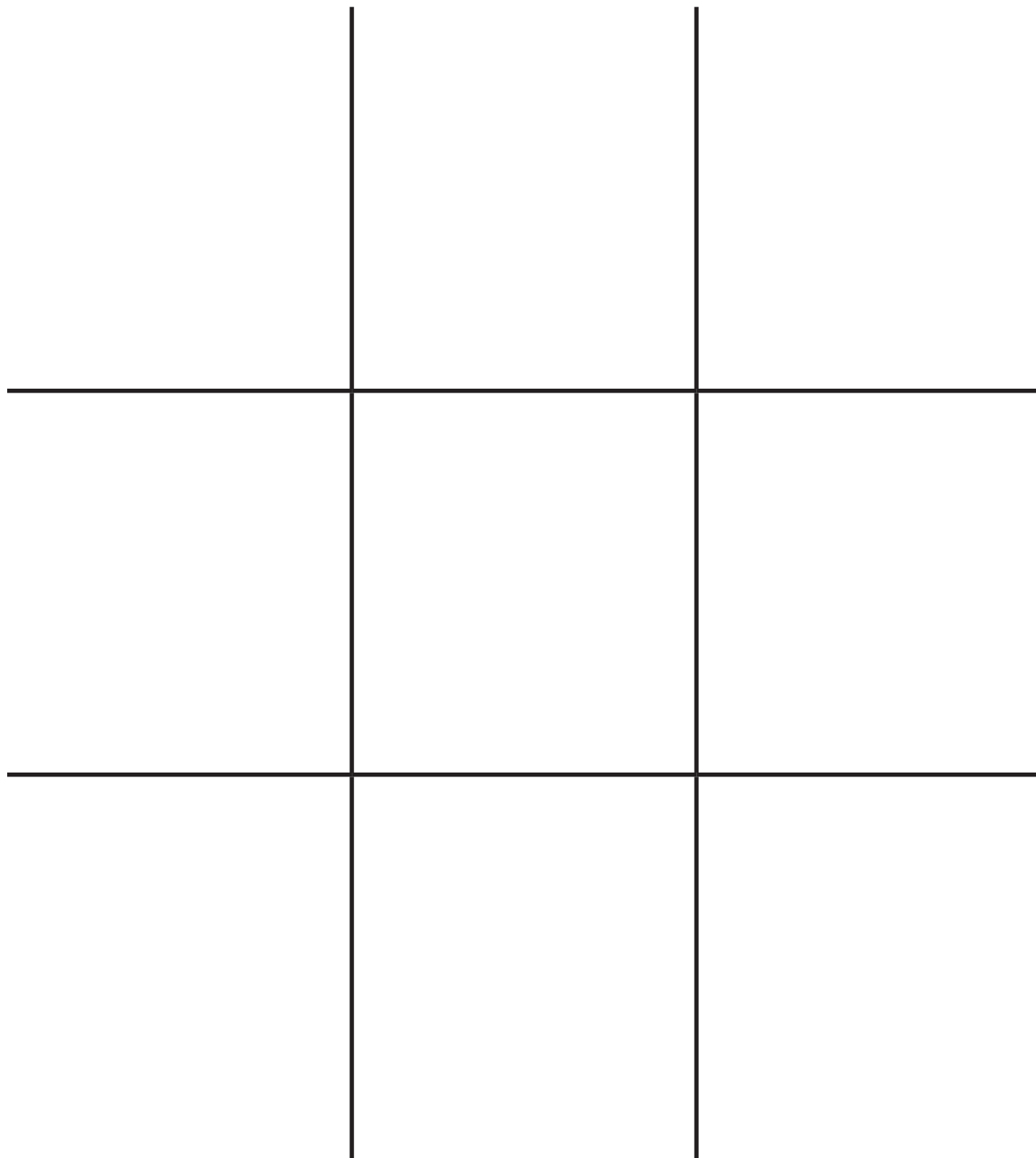
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# Tic-Tac-Toe Game Board



## X & O Tokens

X	X	X
X	X	O
O	O	O
O		

# **Content III-3**

## **Activities**

**S y m b o l s**



# Map Making

## Standard III:

Students will develop an understanding of their environment.

## Objective 3:

Demonstrate how symbols and models are used to represent features of the environment.

## Intended Learning Outcomes:

6. Communicate clearly in oral, artistic, written, and nonverbal form.

## Content Connections:

Math III-2; Spatial relationships  
Math V-1; Simple data

## Content Standard III

## Objective 3

Connections

## Background Information

Maps are all around us and we use them often throughout our lives. Students should realize maps represent a much bigger picture, and that they can make a map to represent many different things.

## Research Basis

Jitendra, A. (2002). Teaching students math problem-solving through graphic representations. *Academic Research Premier*. Retrieved November 28, 2006.

This author shares a study done on students with learning disabilities in regards to their mathematical ability. They found that students were much more successful using graphic representations than doing math the traditional way.

Bowers, S. P. (2005). The portfolio process: questions for implementation and practice. *Academic Research Premier*. Retrieved November 28, 2006.

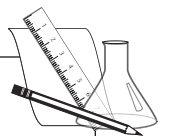
In this article, we learn about the best practices the author found in introducing and using portfolios in your classroom as a tool of assessment. It also discusses some challenges that may occur while creating portfolios and some ways to handle those challenges if they occur.

## Invitation to Learn

Have students play “I Spy” in the classroom. Before they begin, remind them to pick big objects in the room such as the teacher’s desk, student desks, chairs, etc. You want them to focus on objects in the room that would be placed on a map of the classroom.

## Materials

- ☐ Map of your school – 1 per student
- ☐ *My Classroom*
- ☐ *Classroom Furniture*
- ☐ Five to six small notebooks
- ☐ Pencils



## Instructional Procedures

1. Introduce the situation of someone else coming in the room and wanting to find something. Ask students what you could give the person to help him/her find, for example, where the teacher's desk is, or where the reading table is.
2. Discuss with students why we use maps and share with them a brief history of maps and how they were and are made. Share any books you may have about maps and how they are made.
3. Give each of your students a map of your school and let them investigate it in table groups and discuss what they see. In a small group, let them play *I Spy* with the map and see if the others can find what they are looking for. They can use the vocabulary "I spy the office, can you?" The other students should locate and point to the correct spot on their map. At the end of the activity, gather students together and have them share the things they noticed on the map.
4. Have each student take their map and go on a walk around the school with you. Point out different features on the map. Help students to understand that although the classrooms are big in real life, when placed on the map, they have been made much smaller.
5. Bring your students back to the room and tell them they are going to make a map of the classroom.
6. Have them list items they will include on their map (desks, chairs, books, tables, etc). Remind them when you look at a map, it's as if you are standing on the ceiling looking down, so objects on the walls won't show up as easily. You might want to show a model of a room (cardboard box with doll furniture, or building blocks made into a simple house layout, etc.) – that the students can look down on and see a map you have drawn to represent the room as an example.
7. Using a map of your classroom, similar to the *My Classroom* and the *Classroom Furniture* demonstrate for them how you would make a map of the classroom, making sure to discuss that many items have to fit on the map and therefore the items placed in the room have been made very small.
8. After demonstrating, give students a map of the classroom and have children glue cutout, paper objects in the room according to how they really are. Let them wander around the room to be sure they have placed them in the right place.

## Assessment Suggestions

- Make a map of your classroom and place some objects in the wrong place. Have students identify which items are in the wrong place, and draw a line to where they should be placed.
- Given a blank map of the playground, have students draw in where they would place the swings, slide, etc. to best serve the “optimal playground.”
- Collect maps they made and put in to students’ portfolios to show understanding.

## Curriculum Extensions/Adaptations/Integration

### Reciprocal Treasure Hunting

1. Have students bring a small treasure from home for a treasure hunt that they are willing to give to someone else to keep. You could supply small, simple items such as pencils, stickers, etc.
2. Prior to the activity, hide five to six small containers filled with simple treasures and a small notebook. Place the containers throughout the school. Make maps leading to the small containers.
3. Explain to the students that they are going on a treasure hunt, and that they are not only going to get treasure, but will also be able to hide treasure for someone else. They will also have the chance to write in the notebook that is included in the container, about their adventure.
4. Divide students into five or six different groups. Give the first group a map of where a treasure that you have already hidden is. Send them to find it, with their map, and the treasure they brought with them. When they find the container, they take a treasure inside and replace it with the treasure they brought from home. Continue until all students have received a new treasure.
5. This can also be extended to use as a whole class with other classes. Together, you can write the directions of where you hid the treasure, send them to another class to find the treasure, and then hide something for you to find.

## Family Connections

- Have students make a map of their bedroom or house and return it to school and share. Discuss the differences between the rooms and houses and how they still serve the same function.
- Send home a map of the school, and have students list directions for getting from the classroom to another area in the school.

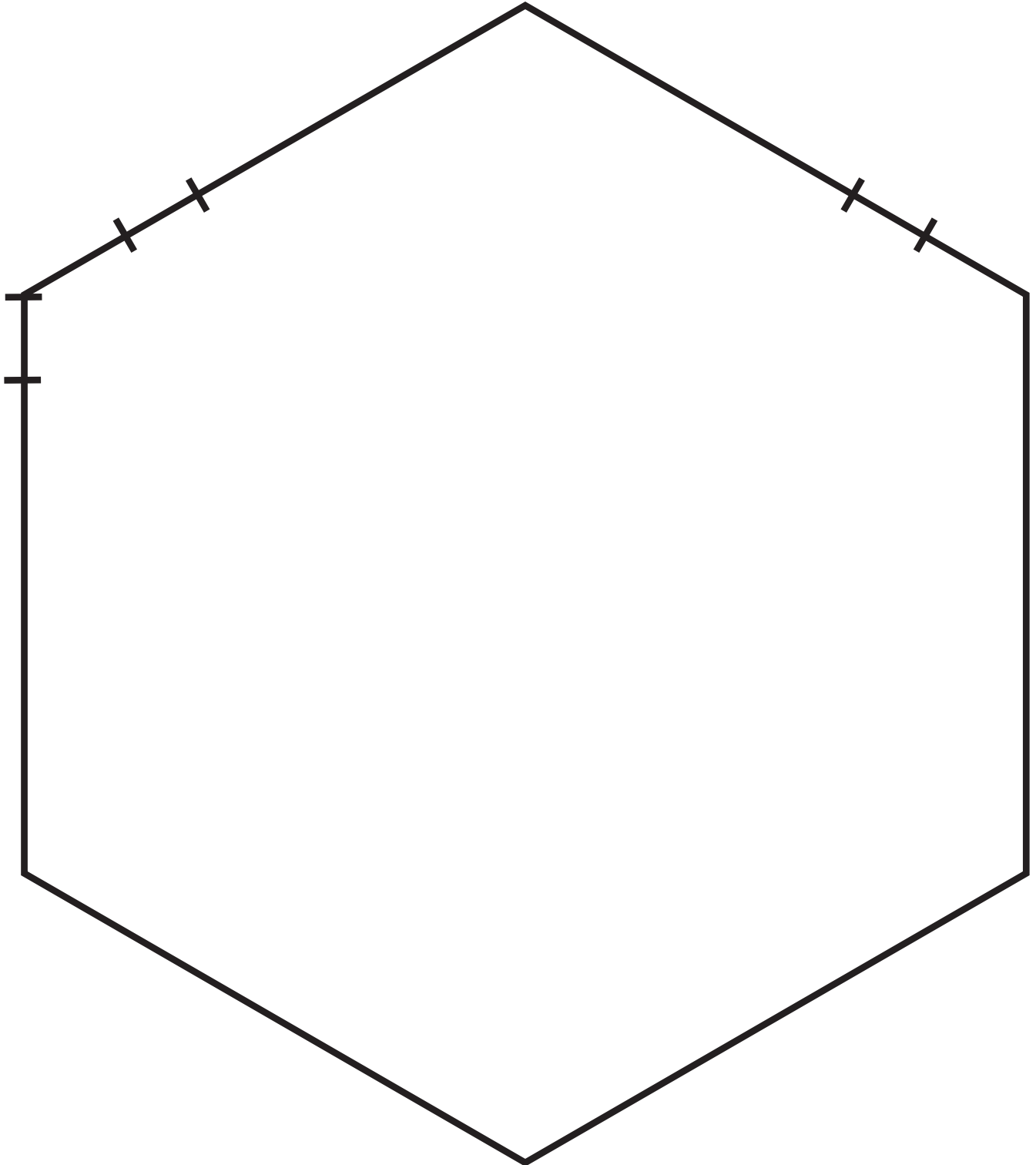
## Additional Resources

### Web sites

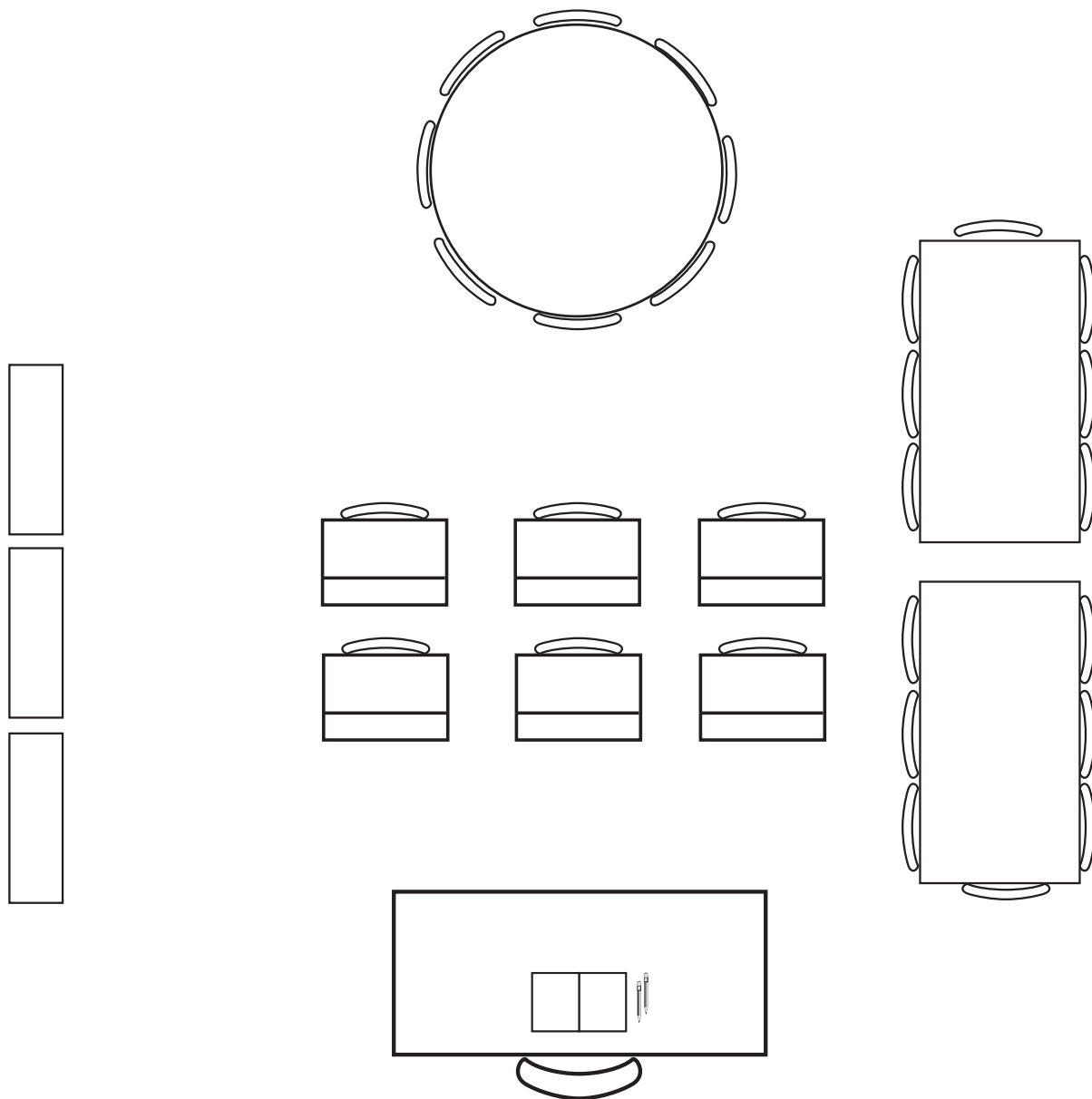
<http://www.geocaching.com>

<http://www.gpsinformation.net>

# My Classroom



# Classroom Furniture



# Delightful Directions

## Standard III:

Students will develop an understanding of their environment.

## Objective 3:

Demonstrate how symbols and models are used to represent features of the environment.

## Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.

## Content Connections:

Math III-2; Spatial relationships, LA I-1; Following directions

Content  
Standard  
III

Objective  
3

Connections

## Background Information

Cardinal directions are a challenge for many first graders to learn, understand, and use. Prior to this lesson, you will want to have exposed your students to using directions in every day life. Discuss things like using their right hand to say the pledge, or discuss which side of the hall they are walking down. Also, familiarize them with the surroundings outside such as the mountains, lakes or rivers that may be close by. Use the terms east, west, north, and south as you describe them to the students.

## Research Basis

Guastello, E.F., Beasley, T.M. & Sinatra, R.C. (2000). *Concept mapping effect on science content comprehension of low-achieving inner-city seventh graders*. ERIC. Retrieved November 28, 2006, from <http://www.eric.ed.gov>

In this article, the authors describe the results from a study that was done with seventh grade science students. One class was taught using direct teacher instruction and another class was taught using concept mapping to connect the subject matter taught. The end result was that the students in the concept mapping class did much better than the class that received direct teacher instruction.

Gibbs, H.J. (2004). Student portfolios: documenting success. *Academic Research Premier*. Retrieved November 28, 2006.

By reading this, we find that students and teachers both benefit from using portfolios in the classroom as a method of assessment. By using portfolios, we can learn more about a student's comprehension of the topic and their performance on their assignments over a period of time.

## Invitation to Learn

### Materials

- ☐ 30 Foam Balls
- ☐ Blindfolds
- ☐ City Maps
- ☐ State Maps
- ☐ *Direction Words*
- ☐ *Farm*
- ☐ *Animals*
- ☐ Counters



The students will play a direction game. Take the class to an open area such as the gym or lunchroom. Lay out soft, foam balls across the floor. Explain to the class that their job will be to try and hit another student with a ball. Once students are hit, they are out. Let students explore and play the game. As they do, point out that the balls don't hurt. After they have played for five to six minutes, blindfold half of the class and have them play the game, while the other half of the class listens and watches silently. Let them play for about 2-3 minutes. Next, pair up the other half of the class and have them stand by their partner and give them directions such as, "move to your right, go down, pick it up, throw" etc. Afterward, have the students discuss with you which way was easier and why it was easier.

## Instructional Procedures

1. Ask students to remember a time they got lost. Have them share what helped them to find their way.
2. Discuss how maps help us find our way to places and the importance of knowing how to use maps. Compare using a map to the time they played the game and had someone to tell them where to go.
3. Show a map to the class and point out features of it: mountains, lakes, states, (if using a US map) cities, compass rose, and directions.
4. Introduce the words: north, south, east, west and place them on the board. Ask the students to share where they have seen and used these words before. Take time to discuss these with the class. Explain that we need to know where these directions are in order to be able to use them.
5. Place direction signs in your room, according to where they exist.
6. Explain to your students that you are going to play a game that will help them learn north, south, east, and west.
7. Play *4 Corners* using the directions north, south, east, west. Pick one student to be "it." They go up to the front of the room, close their eyes, and count to 10. While they count, the other students move to one of the direction corners and stay there. With their eyes closed, the person that is "it" picks a corner

using the words north, south, east or west, and whoever is in it, is out. Continue play until only one student is left. Management tips – have them practice silent cheering and silent getting out.

8. Bring students back and have them share what helped them to remember which direction was which.
9. Introduce “Where Are the Animals?” game to students. Show them the *Farm* worksheet and point out certain features such as, the barn, fence, haystacks, etc. Also, point out the directions north, south, east, west, and practice using them. For example ask them, “Is the hay stack east or west of the barn?”
10. Explain that you have five animals that you will hide on the *Farm* worksheet. Place the five animals from your *Animals* worksheet on the *Farm* worksheet, without the class seeing it.
11. Give each student the *Farm* worksheet and 30 counters that are 2 different colors, 15 of each color, that they can place on the *Farm* worksheet. Have students guess where the animals are hiding by using language such as, “Is it east of the hay stack one space?” Then students should mark their map with counters. One color is used if there is an animal, and the other color is used if there isn’t an animal. Make sure to model this process using the board or overhead prior to beginning this game.
12. After they have played it as a class a few times, and you feel they understand it, have them pair off and play the game with a partner. As they do so, walk around and assist as needed. Remind them to look at the compass on their map to assure they are saying the right directions.

## Assessment Suggestions

- Give students an unfinished map of your classroom. Have them draw in the objects that are missing using clues such as “draw a desk east of the bookshelf” or other clues, according to how your classroom is set up.
- Go on a walk outside. Align the students with north, east, south, and west. Ask them which direction the playground, school, mountains, etc are. Take notes of their use of the directions and those students that may need more work.
- Place any of the above student work in students’ portfolios.

## **Curriculum Extensions/Adaptations/ Integration**

- High students – introduce the terms northeast, northwest, southeast, southwest to them have them play the game using those clues to move diagonally on the chart.
- Low students – first work with cues such as right, left, up, or down making sure to point on the compass with direction they are moving. With time, help them to move on to using the direction names.

## **Family Connections**

- Have students observe what is north, south, east and west of their house and then draw a picture of it. When they bring it back to class, let them share their map with the class and explain it, using the direction names.
- Play the “Where Are the Animals?” game at home.

## Direction Words

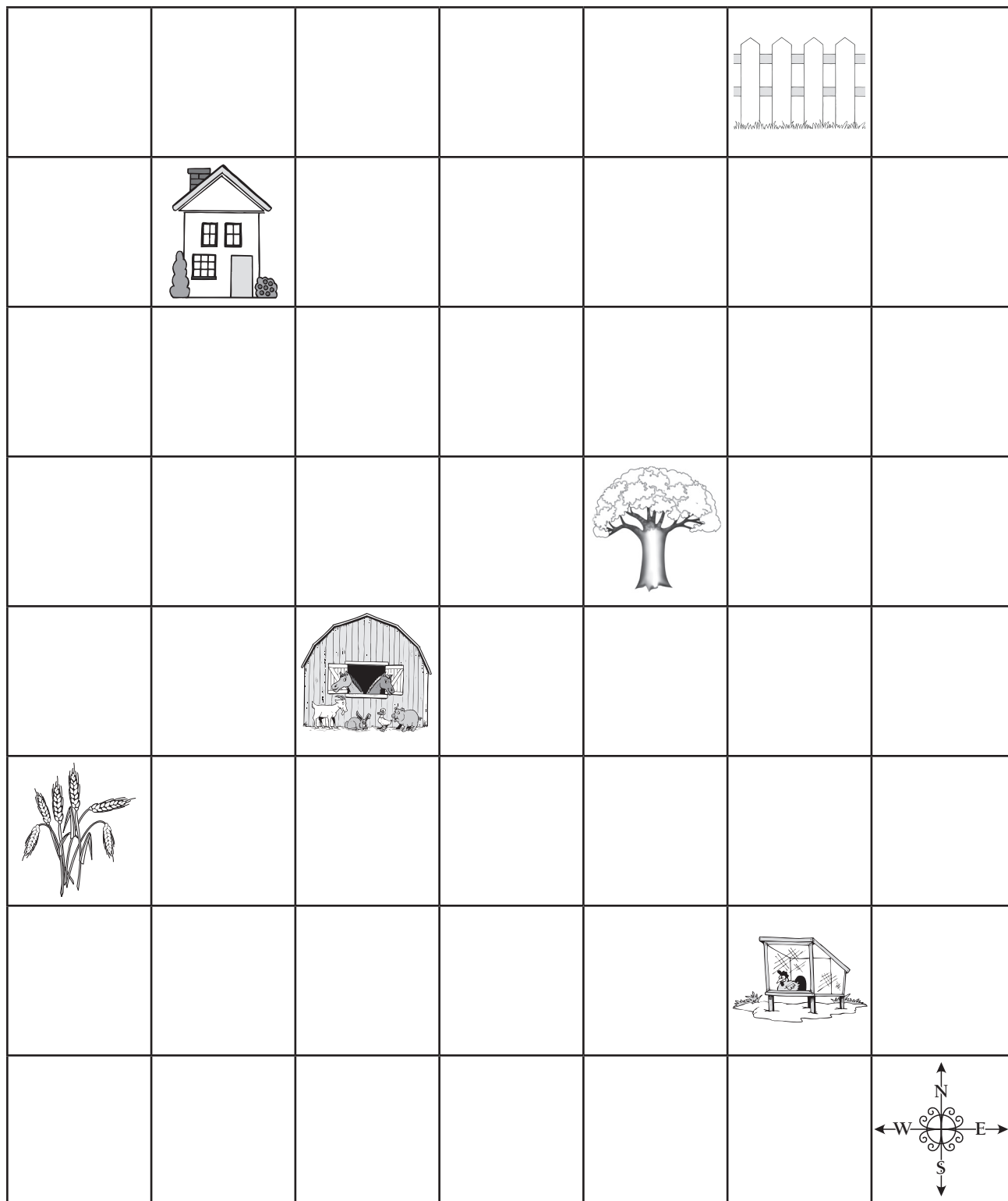
North

East

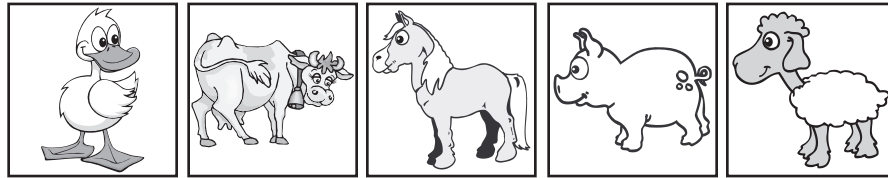
South

West

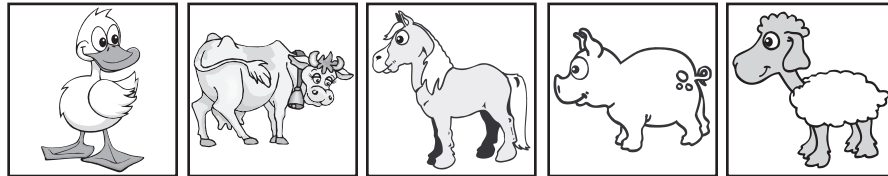
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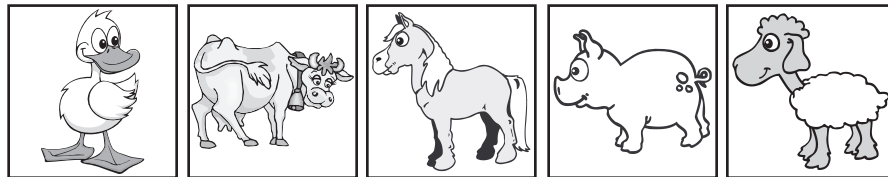
# Animals



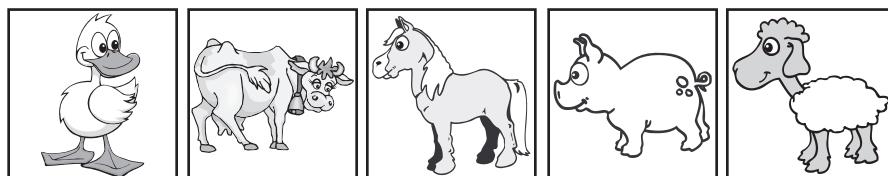
# Animals



# Animals



# Animals



# Around the World

## Content Standard III

## Objective 3

## Connections

### Standard III:

Students will develop an understanding of their environment.

### Objective 3:

Demonstrate how symbols and models are used to represent features of the environment.

### Intended Learning Outcomes:

5. Understand and use basic concepts and skills.

### Content Connections:

Content II-3; Traditions and cultures  
LA VIII-6; Personal writing

## Background Information

There are many cultures and places around our world. In each different place, students are exposed to and participate in activities that are similar and different from our students.

In the book *This Is the Way We Go to School A Book About Children Around the World*, by Edith Baer, students from around the world go to school in a variety of different ways. Throughout the story you read how one student got to school by walking and another by riding in a boat, etc.

## Research Basis

Henry, A., Crawford, C. M. (2001). Graphic representations for learning: developing a learner's conceptual framework. *ERIC*. Retrieved November 28, 2006, from <http://www.eric.ed.gov>

We learn from this article the benefits of using graphic representations to help students during their learning experience. In the article, they discuss how quickly you can teach graphic representations to the students, and how easily they can be used.

White, C.P. (2004). Student portfolios: an alternative way of encouraging and evaluating student learning. *Academic Research Premier*. Retrieved November 28, 2006.

This article stresses the importance of using portfolios in the classroom. It discusses how students can have an ownership of their portfolio and how teachers can help them with the ownership process. Teachers and students should work together to decide what to include, so the portfolio will have more meaning and value for the student.

## Invitation to Learn

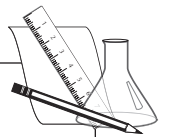
Read *This Is the Way We Go to School A Book About Children Around the World* by Edith Baer to the class. Make a list of the students and how they got to school.

## Instructional Procedures

1. Using a map and a globe, label where the students in the book came from, point out the continent, and show which ocean is next to them. Make sure to point out all the continents and discuss how children from the other continents may have gotten to school.
2. Give each table or small group of students a globe and let them explore it. Then give them a map and have them explore it also.
3. Bring students together and have them share what they learned about the globe and map. Using a Venn Diagram, have students share how the map and globe are different and alike and place answers, which are written on sentence strips, in their corresponding places on the Venn Diagram.
4. Move into discussing the continents and oceans they will need to know: North America, Antarctica, Australia, Pacific Ocean, and Atlantic Ocean. As you introduce them, point them out on both the globe and map. Have students share what they know about them and discuss them as a class.
5. Give students maps that are uncolored, and as a class label these continents and oceans and color them. Then using your globe, point out the continents and oceans.
6. Play the following continent and ocean games.
  - In pairs, students roll a die that has the continents and oceans written on it. After they roll, they have to identify the continent or ocean on the map and mark it with a counter. Once a team member has marked all of the continents and oceans, the game is over and they can start again.
  - This game is played in small groups or partners. Each group has a **World Map** that has each continent colored a different color. They are also given dice with different colors on each side that correspond with the different colored continents. As they roll the die, they look at the map and say which continent is that color. They then mark on the map the continent they rolled, using a counter. Play continues until they have rolled all the continents.

### Materials

- ☐ *This Is the Way We Go to School A Book About Children Around the World*
- ☐ World Maps
- ☐ Globe
- ☐ Venn Diagram
- ☐ Blank sentence strips
- ☐ Map location markers
- ☐ **Blank Map**
- ☐ Blank dice
- ☐ *Continents and Ocean Names*
- ☐ Brown paper bag



- Pair up students. Give each pair a bag and the *Continents and Oceans Names* worksheet. Have them cut up the continents and oceans names and put them in the bag. One partner reaches in and pulls out a continent or ocean word. They then read the word and place it on the *Blank Map* worksheet according to where the continent or ocean is. Once the team has filled the map, they can play again, or they can glue the names on and color the map.

## Assessment Suggestions

- Give students a blank world map of the continents and oceans. On the side, have the continents and oceans listed, and have students draw a line to the continent or oceans name.
- Let students play with the globe and spin it. Have them stop the globe and put their finger on any random spot. Observe to see if they know if it's a continent or ocean, and if they can name which one it is, or one that it is close.

## Curriculum Extensions/Adaptations/Integration

### Around the World

1. Show your students a passport, if you have one, or a picture of what one would look like. Discuss why we need passports and what we use them for.
2. Using pictures of your students, have children make their own passport, by putting their picture on and filling out the information.
3. Tell students they are going to go on a trip around the world through informational/nonfiction books and learn about different things.
4. Each day visit a different continent or ocean and read a story to them. See #5 below. Afterward, have them write what it was like to visit there in their passport and give them a “stamp” from visiting.
5. You can read to them any book about the continent or ocean they are studying. Make sure to include: North America, Antarctica, Australia, Pacific Ocean, and Atlantic Ocean; as well as any others you may want to do.

### Materials

- ☐ Real passport
- ☐ Student pictures
- ☐ Passport



- Read folk tales from the different continents and have students write a response to the folk tale.

## Family Connections

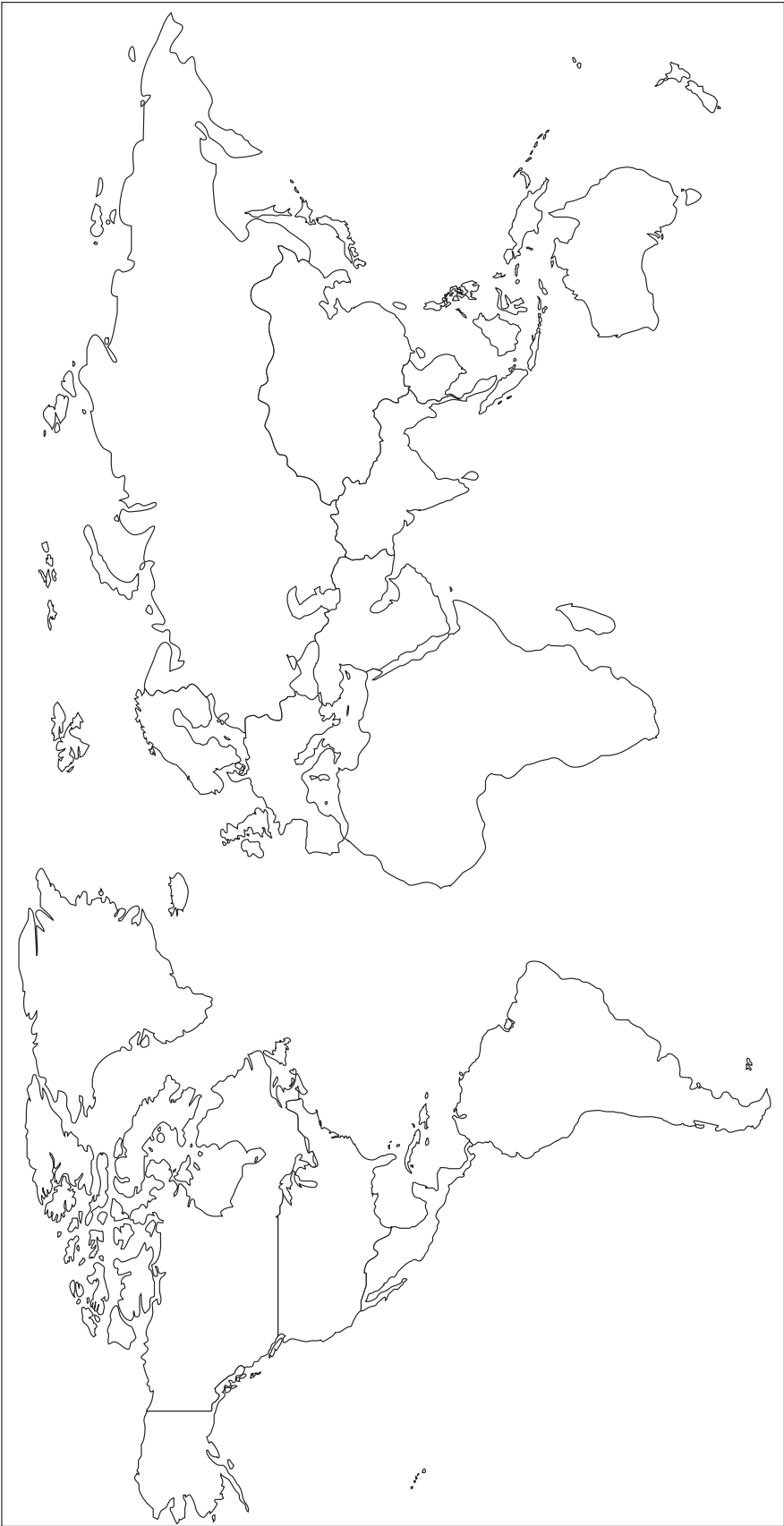
- Have students interview someone who has visited or lived in another continent. When students return to school, have them share some things they learned.
- Send home *Blank Map* worksheet, have students label and color in North America, Antarctica, Australia, Pacific Ocean, and Atlantic Ocean and return it to school.

## Additional Resources

### Books

*This Is the Way We Go to School A Book About Children Around the World*, by Edith Baer;  
ISBN 978-0590293051

# Blank Map



North America	South America	Europe	Asia	Africa
Antarctica	Australia	Pacific Ocean	Atlantic Ocean	

# Passport

Paste the student's picture here

Name \_\_\_\_\_

\_\_\_\_\_ girl \_\_\_\_\_ boy \_\_\_\_\_ height

hair color \_\_\_\_\_ eye color \_\_\_\_\_

Address \_\_\_\_\_

Hometown/State \_\_\_\_\_

Birthdate \_\_\_\_\_

Signature \_\_\_\_\_

# Passport

Paste the student's picture here

Name \_\_\_\_\_

\_\_\_\_\_ girl \_\_\_\_\_ boy \_\_\_\_\_ height

hair color \_\_\_\_\_ eye color \_\_\_\_\_

Address \_\_\_\_\_

Hometown/State \_\_\_\_\_

Birthdate \_\_\_\_\_

Signature \_\_\_\_\_



# **Math I-1**

## **Activities**

**Whole Numbers**



# Let's Learn About Numbers

## Standard I:

Students will acquire number sense and perform simple operations with whole numbers.

## Objective 1:

Represent and use whole numbers up to 100.

## Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.

## Content Connections:

Language Arts VI-1: Students will learn the meanings of a variety of grade level words.

## Math Standard I

## Objective 1

## Connections

## Background Information

In order for students to understand mathematical concepts, they first need a good knowledge of numerals, including how the numerals relate to number words and sets of objects. Allowing students to play with numbers, write about numbers and have opportunities to match up the numerals, number words, and sets of objects, gives students a way to acquire that knowledge.

## Research Basis

Sarama, J., Clements, D., H., (2006). Teaching Math: A Place to Start. *Early Childhood Today*, Jan/Feb 2006, Vol. 20, Issue 4.

Readiness is less about being “old enough,” and more about having opportunities to explore and think about the world mathematically. We need to “speak math” to young children. Opportunities for developing mathematical understandings exist in each learning center, throughout each portion of the day.

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). Classroom Instruction that Works. *Research and theory related to practice*. Alexandria, VA. McRel.

Practice is important for learning. Mastering a skill requires a fair amount of focused practice. Students should be able to adapt what they have learned through use of manipulatives and hands on activities.

## Invitation to Learn

### Stuck in the Middle

Line the students up with an odd number in line. Take one student out as the one who gets to be “Stuck in the Middle”. Help students determine where the middle of the line will be. Have students move

so there is a blank space right in the middle of the line. The student who gets to be “stuck” will stand in that space. Give the first student in line a cube labeled with number words, dots, or numerals. The first student rolls the cube. The student that is “stuck” moves that many spaces toward the student that just rolled. Give the cube to the first student on the other end of the line. He/she rolls the cube, and the student that is “stuck” moves that many spaces toward him/her. Continue playing until the student that is “stuck in the middle” is moved off one end or another of the line.

## Instructional Procedures

### Materials

- ☐ *Classroom Number Book*
- ☐ *My Family Number Book*
- ☐ *My Family Number Book Letter*
- ☐ “Teacher completed” *My Family Number Book*
- ☐ *Counting Crocodiles*
- ☐ Flat Fish Numbers Set



### Number Fun

1. Discuss with students numerals and number words.
2. Ask the students what they know about numerals and number words. Do they recognize that both are symbols used to represent a quantity?
3. Lead the students to the discovery that each set of dots also represents a quantity.
4. Show students the Flat Fish.
5. Explain that each fish in the flat fish set is printed with a numeral, a number word, or a set of dots.
6. Hold up a single fish and have the students tell you if it is a numeral, a number word, or a set of dots.
7. Snap three of the fish together to show the three ways a number can be shown using the Flat Fish.
8. Hand out the remaining Flat Fish that will be needed in the story *Counting Crocodiles*.
9. Read the story *Counting Crocodiles*.
10. When a number word is used in the book, have a student match up the number word with the correct number of dots and the numeral by snapping the fish together.
11. Hand out a *My Classroom Number Book* to each student.
12. Instruct students to turn to the first page.
13. Using an overhead or other method, show students how to fill in the blanks using the numeral 0 and number word zero.
14. Students will then draw themselves with zero objects.
15. Students will be able to share their completed pages.

16. Complete one page each day for the next 10 days. At the conclusion of 11 days, students will have a book that shows each numeral and related number word for quantities 0-10.
17. After day 11, the students will be able to take home their *Classroom Number Books* to use as an example to complete the *My Family Number Book* homework assignment.
18. Give each student a bound *My Family Number Book* and a *My Family Number Book Letter*.
19. Explain to the students that they will be completing their book at home with their families and returning the completed book to share with the class.
20. Share your completed Family Number Book as an example.
21. Have the students place their *My Family Number Book* and *My Family Number Book letter* in their backpacks.
22. Make assignments as necessary for student presentations of the *Family Number Books*.

### Match ‘em Up

1. Decide which numerals and number words you want the students to practice.
2. Remove the fish that will not be used.
3. Hand out the fish to the students.
4. Invite a student to the front of the room. The student will need to describe the fish that he/she is holding. For example, the student could say, “My fish has 4 dots”.
5. Other students that have a representation of 4 (either the number word or numeral) would then say, “My fish has the numeral 4”. Or “My fish has the number word four”.
6. Invite another student to the front of the room to repeat the process.
7. After participating in this activity a few times, the students should be ready to work independently to use their “math talk” to find the match.
8. Always check to see that students are matched up correctly.
9. Leave the fish in a location accessible to the students so they can practice matching up the fish by numeral, number words, and dots.

### Number Hunt

#### Materials

- ☐ Flat Fish Numbers Set



#### Materials

- ☐ Flat Fish Numbers Set
- ☐ Number/dot/word cards
- ☐ Pocket Chart number line



1. Create a large number line or use a pocket chart number line.
2. Fill in the blanks on the number line, leaving some numbers out.
3. Lay the missing number fish or cards on the table or floor.
4. Ask the students to read the number line.
5. Allow discussion time for the students to verbalize that there are missing numerals.
6. Ask for a volunteer to put the missing numerals in the correct place on the number line. Encourage the student to use “math talk” to describe why he/she put the numeral in that space.
7. Play again using number words instead of numerals.
8. Repeat using dots instead of numerals or number words.

### Show Me

#### Materials

- ☐ Random Numeral Strips
- ☐ Number Word Cards
- ☐ Math Journals
- ☐ Ziploc Bags



1. Call each student over to a work station to create his/her own *Random Numeral Strip*. Each student will tell the teacher or grown-up helper any numeral 0-9 in any order to fill in the blanks. If the student tries to put the numerals in order, a gentle reminder to use any numeral 0-9 will help the student create an out of order strip.
2. Laminate the strips for durability.
3. Put one strip on the board and ask the students to read the strip to you.
4. Hand out the *Number Word Cards*.
5. Ask students to bring the number word cards up in the order of the numbers on the strip.
6. After doing this activity as a whole class, ask the students to take out their math journals.
7. Hand out one *Random Numeral Strip* (at this point, students may or may not have their own strips) and a set of *Number Word Cards* to each student. If you have not pre-cut the *Number Word Cards*, allow students time to cut their cards apart on the lines. Storing the *Number Word Cards* in a baggie in the students' desks keeps the cards accessible at all times.
8. Have the students write the student's name that is on top of the *Random Numeral Strip* in their journals. This gives them accountability as the teacher can easily check to make sure the student completed the assignment correctly.

9. Students will match up the number word with the numeral and then record the result in their math journal.
10. Complete this activity each day, having the students select a new *Random Numeral Strip*.

## Assessment Suggestions

- Call students over to a table one at a time to complete any of these activities independently.
- Check the responses in the student journals for completion and correctness.
- Pre-assess students using the Flat Fish numerals, number words, and dots.

## Curriculum Extensions/Adaptations/Integration

- During the number hunt activity, advanced learners may enjoy having the numeral, number word, and dot fish cards used together on the same line.
- ESL learners should be given extra time to explore the manipulatives and use the correct vocabulary associated with these activities.
- Allow students to complete the *Random Numeral Strip* activity by creating a pictorial representation of the numerals.
- Students could also be asked to create *Random Numeral Strips* using number words or dots.

## Family Connections

- Families may be invited to attend class when their student presents his/her *Family Number Book* to the class.
- Allow the students to take home enough *Random Numeral Strips* and *Number Word Cards* for the people in their families. They can complete the activities at home.

## Additional Resources

### Books

*Counting Crocodiles*, by Judy Sierra; ISBN 0-15-200192-1; ISBN 0-15-216256-5 pb

*Ten Little Fish*, by Audrey and Bruce Wood; ISBN 0-439-84933-0

## Media

*Clifford's Fun with Numbers*, (Scholastic) ISBN 1-55658-293-5

## Web sites

<http://www.nlvm.usu.edu/en/nav/vlibrary/html>

<http://www.eduplace.com/kids/mhm/testprep/gr1/index.html>

<http://www.funbrain.com/numwords/index.html>

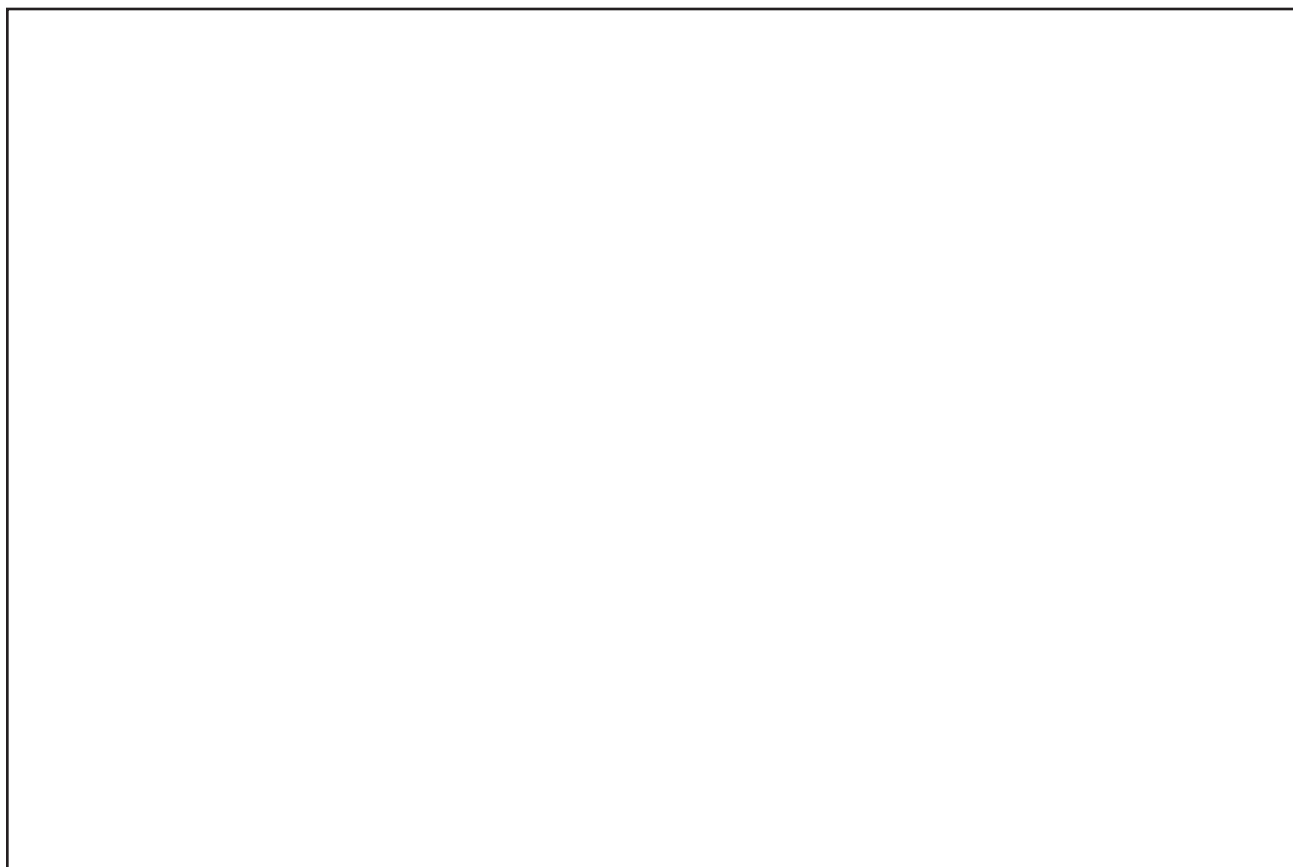
<http://www.abc.net.au/countusin/games.htm>

<http://www.bbc.co.uk/schools/numbertime/games/mend.shtml>

<http://www.magickeys.com/books/count/page1.html>

# Classroom Number Book

Our Classroom has



is the same as

By

Dear parents,

Your student is bringing home his/her completed Classroom Number Book. Please have your student read his/her book out loud to you.

Please complete this number book WITH your child. Complete family participation is requested. That means that everyone can help with ideas, writing, and illustrations! Your student should be able to read this book aloud by him/herself when he/she brings it back to school.

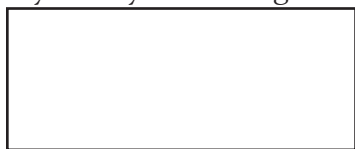
Your student will be able to share his/her book in front of the class as soon as it is returned, completed, to school. Please finish and return this book no later than \_\_\_\_\_.

Thanks for supporting your student's learning!

Here is an example of what a completed page will look like:

Zero

My family has 0 frogs.



0 is the same as zero.

---

Dear parents,

Your student is bringing home his/her completed Classroom Number Book. Please have your student read his/her book out loud to you.

Please complete this number book WITH your child. Complete family participation is requested. That means that everyone can help with ideas, writing, and illustrations! Your student should be able to read this book aloud by him/herself when he/she brings it back to school.

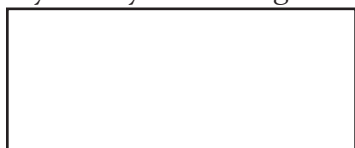
Your student will be able to share his/her book in front of the class as soon as it is returned, completed, to school. Please finish and return this book no later than \_\_\_\_\_.

Thanks for supporting your student's learning!

Here is an example of what a completed page will look like:

Zero

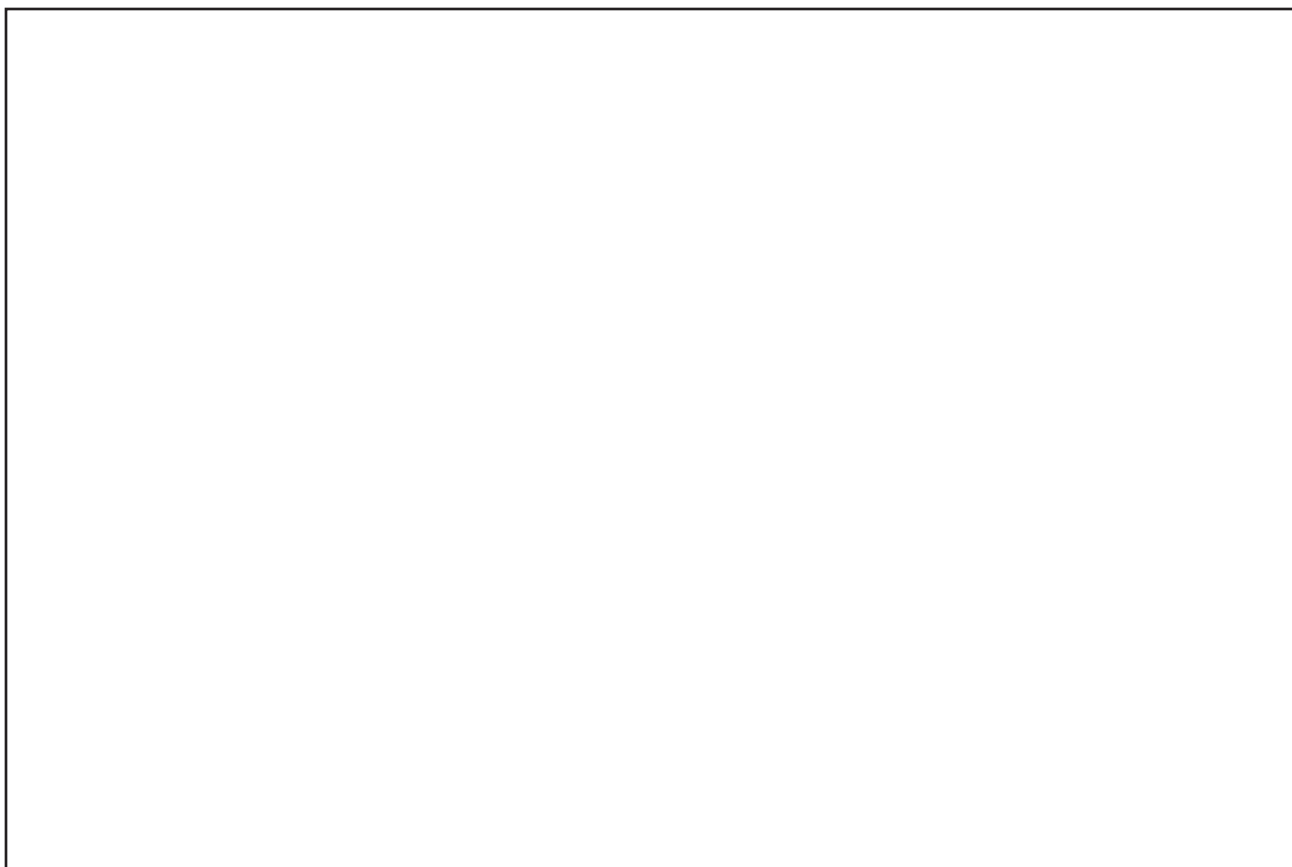
My family has 0 frogs.



0 is the same as zero.

# Family Number Book

My Family has



is the same as

By

## Number Word Cards

zero	nine	one
one		two
two		three
three		four
four		five
five		six
six		seven
seven		eight
eight	zero	nine

## 5-13

[illegible]

# Playing with Tens and Ones

## Math Standard I Objective

### Connections

#### Standard I:

Students will acquire number sense and perform simple operations with whole numbers.

#### Objective 1:

Represent whole numbers up to 100.

#### Intended Learning Outcomes:

5. Understand and use basic concepts and skills.

#### Content Connections:

Language Arts I-1; Students will listen, follow multiple step directions, and respond appropriately.

## Background Information

The system of numbers we use is a base ten system. Teaching students to group objects into tens whenever possible, allows them to quickly sort and count a set of objects. Students should be familiar with a representation of ten whether using a ten frame, Unifix Cubes, base ten blocks, beansticks, or other manipulatives. These activities are designed to be introduced and played as a whole class and then used in small group settings (such as centers) throughout the year.

## Research Basis

Willingham, D. T., (2004). How we learn. Ask the cognitive scientist. *American Educator*.

The author states, “It is difficult to overstate the value of practice. For a new skill to become automatic or for new knowledge to become long lasting, sustained practice, beyond the point of mastery, is necessary.” The article points out that through sustained practice past the point of mastery, students have a better chance of meeting three important goals of instruction: acquiring facts and knowledge, learning skills, and becoming an expert.

Megnin, J. K., (1995). Combining memory and creativity in teaching math. *Teaching Pre K-8, March 1995*.

By using free choice (students learning on their own from a variety of learning materials), group learning (students working together to practice or problem solve), and children’s choice (students choosing their own practice materials), students are more likely to improve their skills. Creativity is encouraged

### Materials

- ☐ Unifix Cubes
- ☐ 2 Buckets, bins, or other containers
- ☐ Math Journals
- ☐ Base Ten Stamps
- ☐ Ink pad
- ☐ Class Math Journal



and students are taught in a real life situation how to communicate with each other.

## Invitation to Learn

### Drop and Check

Each time a student leaves the classroom, he/she drops a cube into a bucket. At the end of the day (or at lunchtime and again at the end of the day), the students will sort and count the cubes. Naturally the students will begin counting by ones. Guide the students to group the cubes different ways to count more effectively. Grouping by tens is the fastest, easiest way to complete the Drop and Check activity. Have the students record the results in their math journals. When recording, have the students use both forms of expanded notation. For example: If the total cube count was 45, students would record  $40+5$ , 4 tens + 5 ones. Compare from day to day.

If you find that there are more than 100 cubes on a daily basis, consider only having the students drop a cube when they leave for the bathroom, drink, etc. instead of EVERY time they leave the classroom. This problem may also be solved by counting the cubes at different intervals during the day.

Of course, students love to figure out that 10 tens is 1 hundred and are quickly able to group them into tens and then make the trade up to hundreds. Guide the students through this process numerous times. As the students catch on, allow a pair (one more capable student with a less capable student) or small group of students to complete the count, record the count in a class math journal, and report back to the class.

Students enjoy using Base Ten stamps to record the results of the daily Drop and Check count. Students are able to use the block, rod, and cube stamps to visually recreate the total number of cubes from the Drop and Check count.

## Instructional Procedures

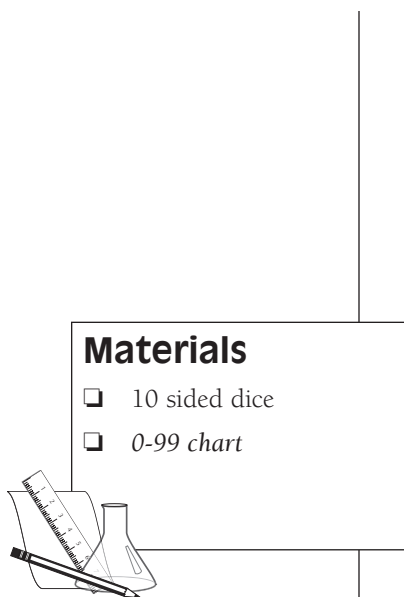
### This Way

1. Give each student a copy of *Color it This Way*.
2. Using an overhead will help with this activity.
3. Introduce the 10 sided dice to the students and explain that the dice are labeled with the numerals 0-9.

### Materials

- ☐ 10 sided dice
- ☐ *Color it This Way*

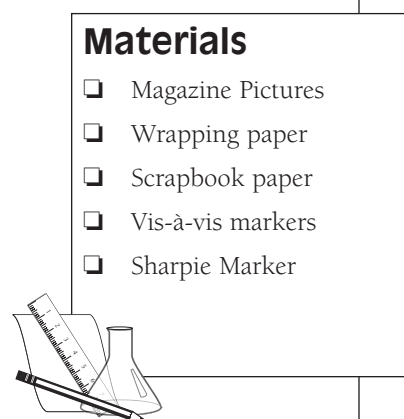




4. Ask a student to roll 2 dice and arrange them to make a 2-digit number.
5. Show the students on the overhead how to color that number on the *Color it This Way* worksheet.
6. Have students color their page to match.
7. Repeat until all of the sections on the worksheet are colored in.

### Ohhhh – 99!

1. Give each student a copy of the *0-99 chart*.
2. Using an overhead will help with this activity.
3. Ask a student to roll 2 of the 10 sided dice and arrange the dice to make a 2-digit number.
4. Color that number on the *0-99 chart*.
5. Students will continue to roll and color until the chart is full or time has run out.
6. Remind students that they may use either 2-digit number shown by the dice.
7. For a quicker game, have the students color BOTH 2-digit numbers shown by the dice.



### Wrap it All Up

1. Purchase wrapping paper or scrapbook paper with small repeated pictures, use magazine pages that have repeated designs, or create your own using small rubber stamps and ink.
2. Cut the paper of your choice into the size you prefer. (8.5x11 seems to work best for storage purposes.)
3. If the paper is flimsy, mount it on cardstock or poster board.
4. Laminate the pages.
5. Hang a laminated page on the board.
6. Ask the students what they think would be the easiest way to count all of the objects in the picture.
7. If necessary, lead them to the conclusion that grouping and then counting by tens and ones is easiest.
8. Using a Vis-à-vis marker, have a student circle a group of ten on the laminated page.
9. Repeat until all groups of ten have been circled.
10. Ask the students to help you count how many objects are on the page.

11. Count by tens and ones.
12. Write the final count somewhere on the page.
13. The final number could be recorded on the back using a Sharpie to make the activity self-checking.

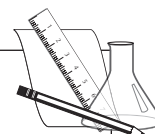
### Silly Out of Order Numerals

1. Call each student over to a work station to create a number list on the *Random Numeral Strips*. Encourage the student to tell you any numeral 0-9 in any order.
2. When each student's strip is complete, laminate the strips for durability.
3. Place 2 *Random Numeral Strips* next to each other. This will create a series of 2-digit numbers. For example: Anne's *Random Numeral Strip* has the numbers 3, 4, 6, 5, 9, 7, 2, 8 and Nick's *Random Numeral Strip* has the numbers 3, 1, 8, 4, 6, 5, 2, 7. When these two strips are placed side by side, the series of 2-digit numbers created will be: 33, 41, 68, 54, 96, 75, 22, 87.
4. Students will record the 2-digit numbers in their math journals along with the expanded notation for each number created. In the case of Anne and Nick's *Random Numeral Strips*, the journal entry could be:
 

33	3 tens 3 ones	30+3	
41	1 one 4 tens	40+1	
68	6 tens 8 ones	8+60	etc.
5. Students may also create the numbers using Unifix Cubes, beansticks, base ten stamps, or other manipulatives.

#### Materials

- ☐ *Random Numeral Strips*
- ☐ Math Journals



### B-I-N-G-O

1. Teach the students this new BINGO song:  
 There was a farmer had a dog and BINGO was his name-o.  
 BINGO had a lot of spots,  
 BINGO had a lot of spots,  
 BINGO had a lot of spots the farmer wanted covered!
2. Show the students the B-I-N-G-O cards that have been programmed with 2-digit numbers.
3. Tell the students in order to get "bingo," they have to cover all of B-I-N-G-O's spots!
4. Give each student a B-I-N-G-O card and enough counters to cover all of the spots.

#### Materials

- ☐ *B-I-N-G-O* cards programmed with different 2-digit numbers
- ☐ Counters, beans, beads, cereal, M&M's, etc. to use for markers
- ☐ *Tens and Ones* calling cards OR
- ☐ 10-sided dice



5. Use the *Tens and Ones calling cards*, or 10-sided dice. Create a number and sing:  
 BINGO has \_\_\_\_\_ tens \_\_\_\_\_ ones,  
 BINGO has \_\_\_\_\_ tens \_\_\_\_\_ ones,  
 BINGO has \_\_\_\_\_ tens \_\_\_\_\_ ones – what is that number?
6. Students that have the newly created number on their B-I-N-G-O cards will cover it with a marker.
7. Create a new number and sing again.
8. Play until someone has covered all of B-I-N-G-O's spots and shouts out BINGO!

### Place Value Bingo

1. Give each student a copy of *Numeral Cards 0-9* and *Place Value Bingo*.
2. Instruct students to cut out the numeral cards along the lines.
3. Students will place a numeral card in each square of the *Place Value Bingo* game board.
4. Use the *Tens and Ones Calling Cards*. Instruct the student which number to cover. You'll only read one card each turn.
5. To get a bingo, the student must have a 2-digit number covered and be able to tell you what the actual number is.
6. When a student gets a bingo, have everyone clear their boards and rearrange the numeral cards to create new 2-digit numbers.

### Materials

- ☐ *Place Value Bingo*
- ☐ *Tens and Ones calling cards*
- ☐ *Numeral Cards 0-9*



### Assessment Suggestions

- Allow students to be the “caller” for the bingo games.
- During the activities, observe the students to gauge their understanding.
- Check math journals on a regular basis.

### Curriculum Extensions/Adaptations/Integration

- Advanced learners enjoy trying to get a “bingo” on the *0-99 chart* using the 10-sided dice.
- Programming the *B-I-N-G-O* cards using only numbers within a certain range will make the game move more quickly. For example – using a green background, program all of the cards

using only numbers with a 2 in the tens place. When you play, take out all of the *Tens and Ones calling cards* that have something other than 2 in the tens place. Creating the cards on different background colors will make them easier to sort.

- Include ideas for integration for other curricular areas (use appropriate subject area headings).

## Family Connections

- Any of these games are fun for families to play. Simply copy the directions and send the directions and all materials home with the student. Teaching the family to play is a great way to strengthen student skills.

## Additional Resources

### Books

*A Place for Zero*, by Angeline Sparagna Lopresti; ISBN 978-1-57091-196-5

### Media

*Curious George Flies a Kite and other adventures DVD*, PBS, Universal, ASIN B000EW73V8

### Web sites

<http://www.apples4theteacher.com/math/games/100-number-chart-zero.html>

[http://www.internet4classrooms.com/skills\\_1st.htm](http://www.internet4classrooms.com/skills_1st.htm)

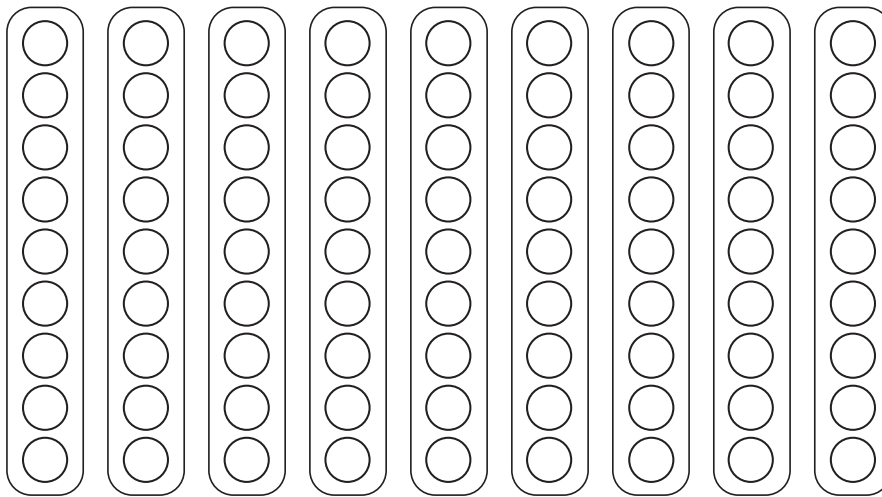
<http://www.edbydesign.com/btcount.html>

<http://www.dositey.com/addsub/tenoneex.htm>

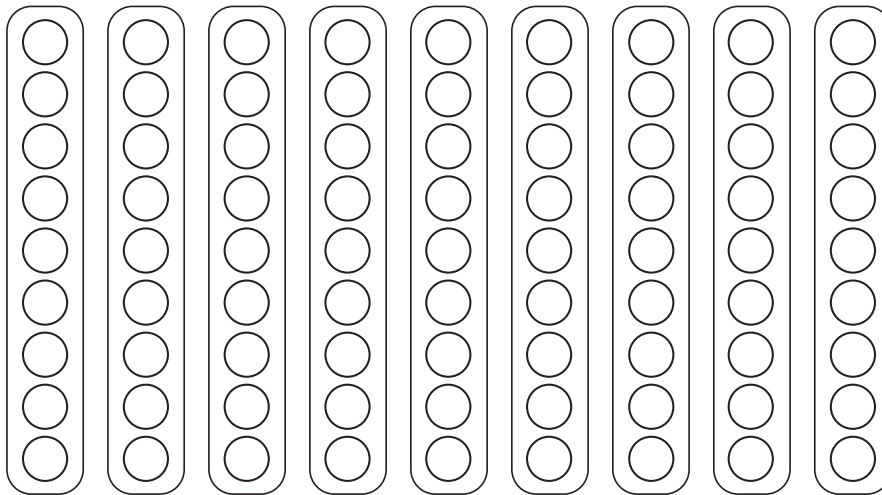
<http://www.ictgames.com/LIFEGUARDS/html>

<http://www.ictgames.com/sharknumbers.html>

## Color it this Way



## Color it this Way



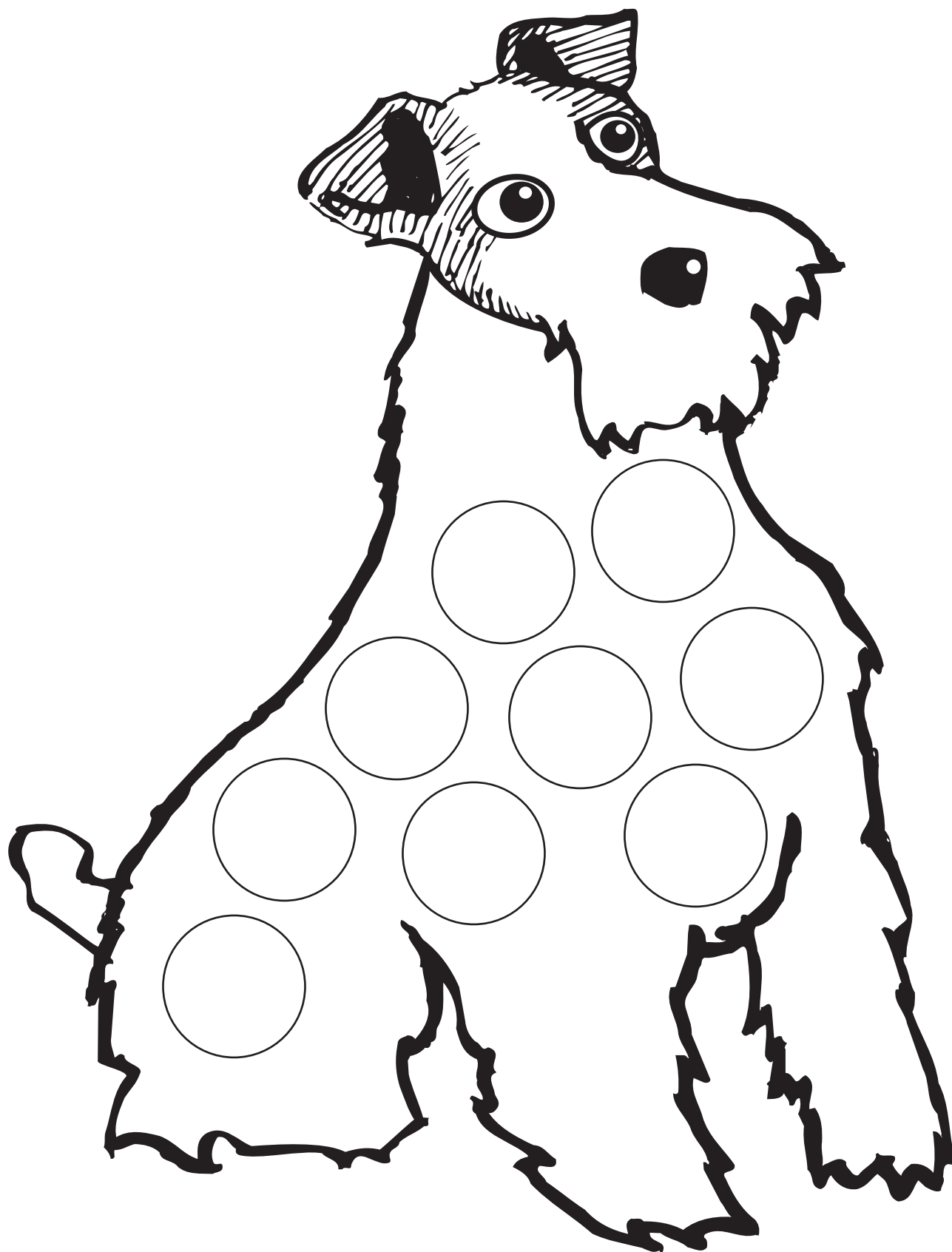
# 0-99 Chart

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

# 0-99 Chart

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

**B-I-N-G-O**



# Tens/Ones Calling Cards

0 in the tens place	0 in the ones place	1 in the tens place
1 in the ones place	2 in the tens place	2 in the ones place
3 in the tens place	3 in the ones place	4 in the ones place
4 in the tens place	5 in the tens place	5 in the ones place
6 in the tens place	6 in the ones place	7 in the ones place
7 in the tens place	8 in the tens place	8 in the ones place
9 in the tens place	9 in the ones place	

# Place Value Bingo

Tens	Ones

# Numeral Cards 0-9

0	0	1
1	2	2
3	3	4
4	5	5
6	6	7
7	8	8
9	9	



# **Content II-1**

## **Activities**

## **Relationships**



# Traditions in Our Family

**Standard II:**

Students will develop a sense of self in relation to families and community.

**Objective 1:**

Describe behaviors that influence relationships with family and friends.

**Intended Learning Outcomes:**

1. Demonstrate a positive learning attitude.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

**Content Connections:**

Language Arts VIII; Writing;  
Math IV; Months

*Content  
Standard  
II*

*Objective  
1*

Connections

## Background Information

This activity is called Traditions in Our Family. This lesson gives the students an opportunity to see that every family has traditions they participate in throughout the year. The ideal time to begin this activity is within the first two weeks of school. Do steps two to four first, at the beginning of the school year, when discussing what each child did in the summer. Then repeat this activity as each new season begins. This gives the student a sense of belonging to a family and a community. Before teaching this lesson, the months of the year and the names of the seasons need to be reviewed in oral and/or written form. You may choose to teach the steps of this lesson all in the succession of a day or over the span of many days, as your schedule and preference dictates.

In the book, *When This Box is Full*, by Patricia Lillie (illustrated by Donald Crews), a child fills a box with things that represent each month of the year. There are several repetitions of the months in the story. Therefore, the students can read along. The story ends with the character (child) wanting to share what is in the box with you, the reader. After reading the book, the teacher will ask the students to name each month of the year and each of the four seasons. The teacher will then present his/her box to the class and the students will have a chance to see if they can match an item in the box (items may or may not be the same objects as in the book) with the appropriate month of the year.

## Research Basis

Goodlad, J. I., Soder, R., Sirotnik, K. A., (1990). *The Moral Dimensions of Teaching*. Jossey-Bass Inc. Publishers, San Francisco, California.

“Classrooms contain children of enormous diversity in family background, culture, language, and preparation for school activities, as well as huge variations in both readiness and the ability to learn. Teachers must ask: “How can I meet the needs of every student, regardless of his/her learning style or disposition?” This lesson lends itself to helping every child feel a part of a community by recognizing that all families, schools, and communities have traditions and they can be a part of traditions that surround them.

## Invitation to Learn

### Materials

- ☐ *When This Box is Full*
- ☐ Large colorful box
- ☐ Items representing each month
- ☐ *Tradition Rap*
- ☐ *Month Cards*
- ☐ *Season Cards*
- ☐ *My \_\_\_\_\_ Season*
- ☐ Name Sticks
- ☐ Rubric Checklist for Months & Seasons
- ☐ Months Assessment Match
- ☐ *1<sup>st</sup> Grade Writing Assessment Form*
- ☐ Family Questionnaire



Within the first two weeks of school is the ideal time to do this activity. Students will sit on the rug as you discuss their understanding of a tradition. Then teach them the “Tradition Rap”. This rap should be a part of the classroom repertoire throughout the year. Next, you will read *When This Box is Full*. The repetition of this book lends itself to shared reading as the students read the months of the year with you.

### Instructional Procedures:

1. Read aloud the book *When This Box is Full*. The repetition of this book lends itself to shared reading, as the students read the months of the year with you.
2. Students will be in their seats for this activity. You will want to have prepared name sticks, months of the year/seasons word strips, and a box of items that represent each month. Name sticks lend themselves to giving every student the opportunity to participate in this activity. Select a name stick and ask that student to recall a month of the year. When the student says a name, she will place that month card on the board in the right order beginning with January. After all the months are named, ask a student to name a season. Discuss what months go with that specific season and place the season above the appropriate three months in the northern hemisphere. Then continue using the name sticks to select a student to come and pick an item out of the box and match the item with the appropriate month. Continue this process until all 12 items are matched with a month.
3. Ask the students to tell about some of the things they did in the summer with their family. Write these things on the board. Give each child a chance to tell you something, even if it is as

simple as watching T.V. Tally items that are repeated. You might want to let a student tally for you.

4. Give students My \_\_\_\_\_ Season paper. Have the students fill in the blanks of “In the summer I \_\_\_\_\_ with \_\_\_\_\_.” (e.g. In the summer, I went camping with my cousins.) The student will illustrate a picture to go with the writing. As the year progresses into Fall, Winter, and Spring, repeat this activity. Most students should begin to write with fewer prompts.
5. Put pages into a class book and have the student read what he/she wrote, to the class. This gives the student a sense of ownership.

## Assessment Suggestions

- Use the *Rubric Check List for Months and Seasons* where the students will name the months of the year and the seasons as the teacher marks the correct answers.
- Use an assessment where the students will match the appropriate item to the appropriate month.
- Teachers will check the students’ writing using the writing assessment rubric for writing competence.

## Curriculum Extensions/ Adaptations/ Integration

- Practice *The Tradition Rap*, then follow instructional steps two thru four at the beginning of fall, winter, and spring.
- Do interactive writing about the months of the year and the seasons.
- Put a “This Box is Full” box in a writing center. Students will pull an item from the box and write about it.
- Share other books with the students about the months and seasons of the year and traditions some families enjoy (see additional resources below).

## Family Connections

- Copy the *Tradition Rap* and have each student take it home and share it with his/her family.

- Send the *Family Questionnaire* home with each student and have the students sit down with their family and answer questions about traditions they share in their home. Students will return with the black-line paper and share their family traditions with the class.

## Additional Resources

### Books

*A House for Hermit Crab*, by Eric Carle; ISBN 0-590-42567-6

*A Busy Year*, by Leo Lionni; ISBN 0-590-47273-.

*A Child's Calendar*, by John Updike; ISBN 0-8234-1766-2

*Too Many Tamales*, by Gary Soto; ISBN 0-698-11412-4

*Thunder Cake*, by Patricia Polacco; ISBN 0-399-22231-6

*Dear Rebecca, Winter Is Here*, by Jean Craighead George; ISBN 0-06-021139-3

*When this Box is Full*, by Patricia Lillie; ISBN 0688120164

# The Tradition Rap

Every family has traditions  
for the winter, spring, and fall.



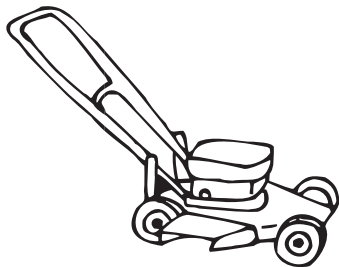
And also in the summer when  
relatives come to call.

Some families like camping.  
While others like to ski.



Some like to go on picnics,  
play games, or watch T.V.

Some families plant gardens  
and have chores to do each day.



And many celebrate holidays,  
in a very special way.

Traditions are a part  
of every family.



Let's give thanks for fun traditions  
in the homes of you and me.



## Month Cards

<b>January</b>	<b>February</b>
<b>March</b>	<b>April</b>
<b>May</b>	<b>June</b>
<b>July</b>	<b>August</b>
<b>September</b>	<b>October</b>
<b>November</b>	<b>December</b>

## Season Cards

**Fall**

**Winter**

**Spring**

**Summer**

**My \_\_\_\_\_ Season**

**By**

\_\_\_\_\_

**In the \_\_\_\_\_ I \_\_\_\_\_**

\_\_\_\_\_ **with** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

# Rubric Check List for Months & Seasons

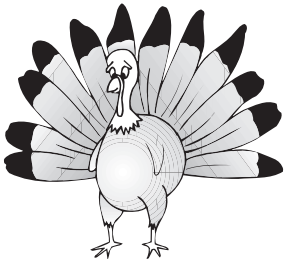
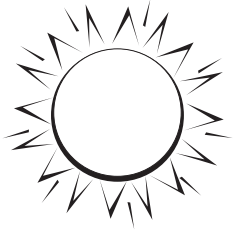
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Seasons	
Winter	
Spring	
Summer	
Fall	

Name \_\_\_\_\_

# Rubric Check List for Months & Seasons

January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Seasons	
Winter	
Spring	
Summer	
Fall	

# Months Assessment Match



January  
February

March

April

May

June

July

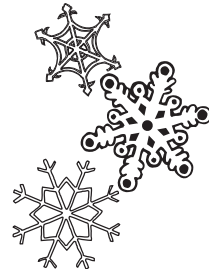
August

September

October

November

December



Name \_\_\_\_\_ Teacher \_\_\_\_\_

# 1st Grade Writing Assessment Form

When a student has exhibited these skills three times he/she has mastered that skill.

Conventions	Date			Comments
	1st	2nd	3rd	
Spells high frequency words correctly				
Writes legibly				
Uses proper punctuation at the end of sentences				
Spaces between words				
Uses plausible letters and sequence with words				
Uses blends				
Uses digraphs (th, sh, ch, wh)				
Uses word endings (s, ed, ing, er)				
Writes 3 or more sentences on single topic				
Uses basic sentence pattern (subject, verb)				
Uses beginning/middle/end				
Illustrations match writing				
Effective use of resources (word wall, room, books)				
Writes using personal expression				

Dear Parents:

Our class is learning about traditions we have in our families, school, and community. We thought it would be fun to have you sit down with your child and discuss some of the traditions you have in your home. We would like you to fill out this questionnaire and return it to your child's classroom. Then with your permission, we would like to share some of the traditions your family participates in. Thank you.

Student's Name \_\_\_\_\_

Parent's Permission Signature \_\_\_\_\_

What traditions do you share with your family in the summer? \_\_\_\_\_

---

---

---

What traditions do you share with your family in the fall? \_\_\_\_\_

---

---

---

What traditions do you share with your family in the winter? \_\_\_\_\_

---

---

---

What traditions do you share with your family in the spring? \_\_\_\_\_

---

---

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# Spotlight on Students

## Standard II:

Students will develop a sense of self in relation to families and community.

## Objective 1:

Describe behaviors that influence relationships with family and friends.

## Intended Learning Outcomes:

2. Develop social skills and ethical responsibility.
3. Demonstrate responsible emotional and cognitive behaviors.

## Content Connections:

Math I; Greater than, Less than, Equal  
Language Arts IV; Reading & Writing

## Content Standard II

## Objective 1

## Connections

## Background Information

Begin by planning to teach this unit within the first week of school to help the students feel a connection with you (the teacher) and each other. These activities give the students an opportunity to share things about their life and their interests. This is a highlight for every child in the classroom. It is very important to make every child feel special and find success in school. Steps in this unit have been spread out and will cover several days due to the interest span of first graders.

Each student will have an opportunity to be the “Top Banana/King/Queen” (use any title you want) for the day (week). However, before any student has a chance to be in the spotlight, share some details from your own life with the students. This gives the students an opportunity to get to know you and feel a connection with you in the classroom.

Additionally, in using graphs in this unit, the students will feel a connection with other students who have the same attributes. Graphing can be used extensively through questions such as students’ likes, dislikes, interests, etc. When all the charts are written about each child the students can contrast/compare themselves with other class members and analyze the data from graphs. This will help increase math skills.

## Research Basis

DuFour, R., Eaker, R., & DuFour, R. (2005). *On Common Ground*. Solution Tree, Bloomington, Indiana

Continuous improvement in teaching, student achievement, and the quality of relationships among all members of a professional learning community (PLC) is based on a continuous cycle of teaching

and learning. Educators who realize they have something to learn from their students as well as something to teach them usually find success. One of the keys to successful “learning for all” is based on the willingness of the school staff to customize and differentiate its services to meet the specific needs of each student.

## Invitation to Learn

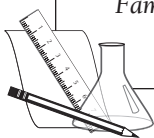
Within the first few days of school, you (the teacher) will share pictures and artifacts (e.g. quilt, crocheting, art, beloved books, etc.) that tell something about your life. Give your students the opportunity to ask questions. You write down the answers on chart paper. This is a good time to explain the difference between questions and statements. Limit the questions to no more than six because students’ short interest span affects the success of this activity.

## Instructional Procedures

1. On the student’s assigned day (week) as “Top Banana”, allow the student to share pictures, artifacts, and a short written history about his/her life. Students will then get to ask the “Top Banana” some questions about his/her family, likes and dislikes, etc. The teacher will write the answers on chart paper. This is a good time to do interactive writing even at the beginning of the year because some students can write some simple words. Afterwards, the students will read the chart together. Then the “Top Banana” will read it before she either takes the chart home or you display it in the classroom.
2. This portion of the activity should be done a day or more after the first “Top Banana” is introduced. Students will get a sticker and put it on a graphing chart over the correct number representing how many people are in her family. Next, discuss the graph and talk about how families are different and alike. The students should get their journals out to write and draw a picture about their own family.
3. Use 2 attribute-grouping circles and place them like a Venn diagram. Put “sisters” above one side, “brothers” above the other side, and “both” above the middle. Also have a third circle by itself and put “none” above it. Each student will put her attribute cards in the correct circle. Next, discuss who has more, less, or an equal number of siblings.

### Materials

- ☐ A favorite reading book.
- ☐ Personal pictures & artifacts
- ☐ Attribute Grouping Circles
- ☐ Attribute Items
- ☐ Large floor graph
- ☐ Chart Paper
- ☐ *Questions for Students*
- ☐ Markers
- ☐ Journal paper
- ☐ *My Brothers and Sisters Classroom Graph*
- ☐ *My Classroom Graph of Family Members*



4. Students get their journals out and write about other students who have the same or a different number of siblings and how their families are alike or different. Just a caution: monitoring students' work will help prevent problems.

## Assessment Suggestions

- Use the *1st Grade Writing Assessment Form* to analyze the writing process.
- Use *My Classroom Graph of Family Members* to graph students' siblings. Students will color the graph in relation to where the cards are placed in the attribute circles or Venn diagram.

## Curriculum Extensions/Adaptations/Integration

- After the students do the second step of the activity draw a curve line, touching the top sticker in each row of the graph to show that families can be different sizes. Have a math discussion about the graph using the vocabulary more, less, and equal to.
- Attribute circles can also be used to recognize students who are the oldest, youngest, middle, or only child in their family.
- Teacher can take the "Top Banana" chart and copy down the written paragraph to put into a class book. There will eventually be a page in the book for each student in the class.
- Create a center where students can match the correct sentences with the picture of the student.
- Have students write in their math journals about the results of the graphs. This is a great opportunity for students to do addition/subtraction/greater than/less than sentences.
- Read a book like the ones suggested in the Additional Resources section. Then the students will participate in interactive writing about feelings (happy, sad, angry, scared, loved, etc.) They may also write in their journals about feelings.

## Family Connections

- Parents may come to share a brief (give the parents a time limit) life history of their child when she is "Top Banana".

## Additional Resources/Books

*The Kissing Hand*, by Audrey Penn; ISBN 0-590-6335-7

*I Already Know I love You*, by Billy Crystal; ISBN 0-06-081519-1

*Love You Forever*, by Robert Munsch; ISBN 0-920668-37-2

*The Way I Feel*, by Janan Cain; ISBN 0-439-32116-6

*When Sophie Gets Angry—Really, Really Angry...*, by Molly Bang; ISBN 0-439-21319-3

## Questions for Students

1. When is your birthday?
2. What is your favorite color?
3. How many people are in your family?
4. What is your favorite food?
5. What do you like to do with your family?
6. Do you have any pets?
7. Do you have a favorite sport?
8. What do you not like to do?
9. What is your favorite movie?

## Questions for Students

1. When is your birthday?
2. What is your favorite color?
3. How many people are in your family?
4. What is your favorite food?
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6. Do you have any pets?
7. Do you have a favorite sport?
8. What do you not like to do?
9. What is your favorite movie?

# My Brothers and Sisters Classroom Graph

How many students in my class have brothers, sisters, both or none?

<b>Brothers</b>	<b>Sisters</b>	<b>Both</b>	<b>None</b>

How many students have brothers? \_\_\_\_\_

How many students have sisters? \_\_\_\_\_

How many students have both? \_\_\_\_\_

How many students have none? \_\_\_\_\_

# My Classroom Graph of Family Members

<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>

# My Classroom Graph of Family Members

<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>

# A Quilt of Many Colors

## Content Standard

## II

## Objective

## 1

## Connections

### Standard II:

Students will develop a sense of self in relation to families and community.

### Objective 1:

Describe behaviors that influence relationships with family and friends.

### Intended Learning Outcomes:

3. Demonstrate responsible emotional and cognitive behaviors.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

### Content Connections:

Language Arts VII; Comprehension, VIII Writing.  
Math II; Patterns

## Background Information

This activity is called *A Quilt of Many Colors*. This lesson gives the students an opportunity to feel a part of the classroom community. You (the teacher) will bring a quilt or other item (made by a family member or friend) to class to share with the students and let the students know how special this item is to you. Give the students an opportunity to tell you something that was made for them that is special.

In the book *The Patchwork Quilt* by Valerie Flourney (illustrated by Jerry Pinkney), a grandmother decides to make a special patchwork quilt from scraps of material in her home. The granddaughter and her mother get involved in the quilt making, too. This story gives the students a sense that we all belong to families at home, school, and in the community. Not every child comes from an ideal home situation. However, it is possible to instill a sense of family in the classroom community. Through the process of making a paper quilt, every child can feel a sense of belonging with his/her school family. It is up to you, the teacher, to provide a safe, caring environment for every student in your class. This unit lends itself to helping each student recognize that he/she is an important part of the school community.

## Research Basis

Bullough, R.V. (2001). *Uncertain Lives*. Teachers College Press, New Your, NY.

Children desperately need mentors, adults who model appropriate behavior, coach it, and reinforce such behavior in others; and schools are one place where they should meet. Mentors are more than friends. "Research has shown that if children and youth can form a meaningful and caring bond or attachment with at least one family member or

significant adult, their chances of a successful, healthy outcome are very high, even in those families that are facing severe challenges, such as poverty, chemical dependency, and abuse or violence.” (Miller, D. (1997) *Mentoring structures: Building a protective community.*)

## Invitation to Learn

The students will sit on the rug as the teacher shares her special quilt/item with the students. Then the teacher will read *The Patchwork Quilt* with the students. After the story is read use chart paper and draw lines on the paper like tic-tac-toe boxes. In each box, write title, characters, setting, beginning, middle, end, text-to-self, text-to-text, and text-to-world (Schema). The students will retell the story, as the teacher writes the words/sentences in the correct boxes.

## Instructional Procedures

1. Teach the students *The Quilt Song*.
2. Students will sit in seats, get journals out and write, “I wish I could make a quilt for \_\_\_\_\_. It would have \_\_\_\_\_ on it because \_\_\_\_\_. (e.g., “I wish I could make a quilt for my mother. It would have hearts all over it because I want my mom to know I love her.”)
3. Brainstorm things the students could draw that would remind them of that student. (e.g., likes to read, good artist, plays soccer, likes dinosaurs, loves rainbows, hearts, smiley faces, etc.) Then students will be separated into groups of five. Give each student a *Person Outline* page. It is an outline of a person laid over a page divided by lines into four equal parts. Ask the students to put hair, eyes, mouth, and clothes on the person so it looks like her. Then each student will pass her paper to a remaining student in the group and she will draw a picture in one of the divided boxes. She should draw something that reminds her of the student whose picture is in the middle of the paper. All four boxes need to have a drawing in it from one of the four other students in the group.
4. When all the person blacklines are finished, tape them together on butcher paper in the shape of a quilt and display this special classroom quilt on a wall in the school. Have a discussion with the students of how each of the pictures represents something special about them and about the class as a whole.

### Materials

- ☐ *The Patchwork Quilt*
- ☐ Quilt or other personal items
- ☐ *The Quilt Song*
- ☐ *Person Outline*
- ☐ Chart Paper
- ☐ Marker
- ☐ Journals



## Assessment Suggestions

- Fill out the *1st Grade Writing Assessment Form* when looking at each child's written work in her journal.
- Use an authentic assessment as the children are drawing their pictures about themselves and drawing the smaller pictures about the other children. Questions you should ask about the artwork are: Is the drawing appropriate, colorful, fills the whole space, exhibits kind thoughts through drawings, etc? Make sure that the students put their names on the back of their section of the paper so you can check later if necessary.

## Curriculum Extensions/Adaptations/Integration

- If they would like, have students share what they wrote in their journals with the class.
- Doing interactive writing using descriptive words about a certain quilt or artifact can be fun.
- Students may bring a special quilt or artifact from home to share with the class.
- Sharing books mentioned in the additional resources and then discussing how they are alike or different from *The Patchwork Quilt* is a great activity.

## Family Connections:

- A member of a student's family may come to and share a quilt or artifact with the class. The family member can describe what is special about the item or how it was made.

## Additional Resources

### Books

*Coat of Many Colors*, by Dolly Parton; ISBN 0-590-89935-X

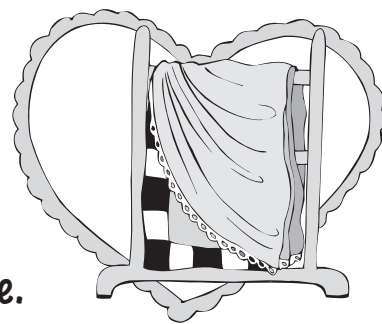
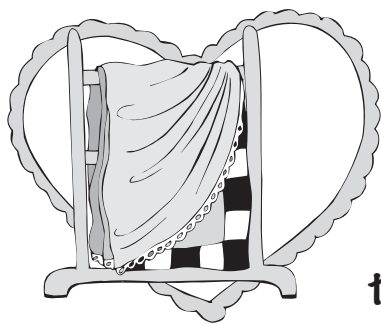
*Something from Nothing*, by Phoebe Gilman; ISBN 0-590-47281-X

*Under the Quilt of Night*, by Deborah Hopkinson; ISBN 0-439-75049-0

*The Quilt Story*, by Tony Johnston; ISBN 0-590-43890-5

*The Patchwork Quilt*, by Valerie Flournoy; ISBN 0590897535

# The Quilt Song



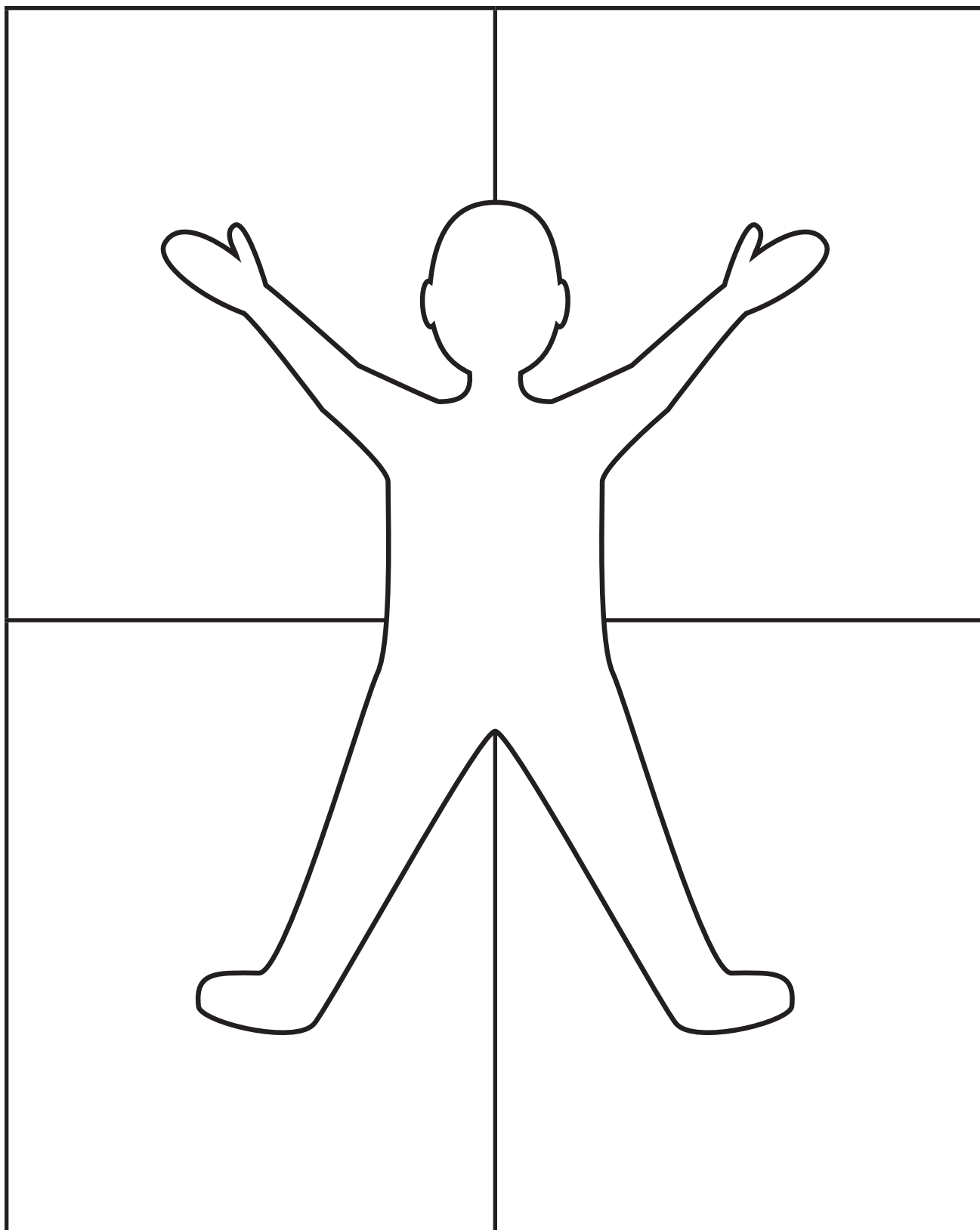
A quilt of many colors  
that my loved ones made for me.  
Reds and blues and greens and golds  
It's a patchwork history.

This quilt of many colors  
That was made so tenderly.  
I'll treasure it forever  
'Cause it tells of family.

Our families are special  
Wrapped in love for all to see.  
And this quilt will keep us warm  
In our community.

When many years go by  
I'll look back on memories  
But nothing will be as sweet  
As this quilt that's made for me.

# Person Outline



# **Math III-1**

## **Activities**

### **G e o m e t r y**



# Pattern Blocks

## Standard III:

Students will understand simple geometry and measurement concepts as well as collect, represent, and draw conclusions from data.

## Objective 1:

Identify, describe, and create simple geometric figures.

## Intended Learning Outcomes:

6. Communicate clearly in oral, artistic, written, and nonverbal form.

## Content Connections:

Language Arts VI-2; math vocabulary words

## Math Standard III

## Objective 1

## Connections

## Background Information

The new Utah Math Curriculum follows the Focal Points from NCTM. Standard III indicates that children will compose and decompose plane and solid figures. This process builds an understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine figures, they recognize them from different perspectives, describe their attributes and properties and determine how they are alike and different. Pattern blocks can help achieve these objectives. When teaching the names of the pattern blocks point out that the smaller tan parallelogram is also called a rhombus and that the larger blue rhombus is also called a parallelogram. A short description of the pattern blocks is referenced in the Additional Resources section.

## Research Basis

Marzano, R. J., (2004). *Building background knowledge for academic achievement: Research on what works in schools*. Alexandria, VA: Association for Supervision and Curriculum Development. Retrieved March 9, 2007, from <http://www.ascd.com>.

This article stresses the importance of academic vocabulary to enhance students' abilities to read and understand subject matter content and help students increase background knowledge that raises their academic achievement.

Scheibelhut, C., (December 1994) *I do and I understand, I reflect and I improve* (Writing in mathematics education). Teaching Children Mathematics. Retrieved November 18, 2006 from <http://www.questia.com>.

This research describes the importance of writing in mathematics. The author states that by forcing a slowdown in the thought process, writing enables the mind to clarify ideas and integrate new knowledge. Each child is actively involved in reflecting on what they have been learning.